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THE

GARDENERS' MONTHLY

AND

HORTICULTURIST.

DEVOTED TO

HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

EDITED BY

THOMAS MEEHAN,

STATE BOTANIST OF PENNSYLVANIA,

FORMERLY HEAD GARDENER TO CALEB COPE, ESQ., AT SPRINGBROOK, AND AT THE BARTRAM BOTANIC GARDENS, NEAR PHILADELPHIA. GRADUATE OF THE ROYAL BOTANIC GARDENS, KEW (LONDON), ENGLAND. MEMBER OF THE ACADEMY OF NATURAL SCIENCES. AUTHOR OF "AMERICAN HAND-BOOK OF ORNAMENTAL TREES," "FLOWERS AND FERNS OF THE U. S.," ETC.

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THE

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VOLUME XXVII. JANUARY, 1885. NUMBER 313.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

One of our nurserymen recently complained to the writer, of those people who continually wrote to his firm for advice. "Please send me ——, and at the same time tell me how to treat them," is a sample of numerous requests. The profit on the whole transaction might be but a dollar or two. Only for the request, the order would be turned over to the proper clerk, and the proprietor could turn his attention to profitable work. But a clerk cannot answer such a letter. The proprietor must do it himself if it is done at all. He is a little nettled at the demand on his time which really renders the order valueless; but he remembers the business maxim that civility always pays in the end, and with the mental wish that the old fellow had sent his query to the Editor of the GARDENERS' MONTHLY instead of imposing on him, he sits down to his half-hour task, and as the letter goes into the post box, blandly smiles as he thinks of the many golden pieces his sacrifice of all profit will next year bring.

Next spring the well remembered handwriting comes. Eagerly the envelope is torn apart, but in dismay he reads: "Not one of those —— came to anything. As I followed exactly your instructions it proves the —— were good for nothing, so I shall expect you to make them good to me without cost." He was at a loss to know whether he lost more by civility than he would by letting the customer go on the just-as-he-like plan. We cannot tell him; but this we do know, from experience in these chapters, that it is almost useless to teach a man gardening by rule or note, when he has not common sense to go along with the instruction.

Not long since a gentleman wrote, "my gardener, to whom I showed your 'Seasonable Hints,' says what you say about planting trees has been the cause of his great failure last year. He had not the year before been very successful in the trees I purchased. He pressed the earth in very carefully about the roots, but fully one-third died. I bought a hundred extra-fine evergreens of a nurseryman, and paid an extra price for some that had been several times transplanted. They had roots like moss. I never saw such a mass of fibres. I gave him your magazine and showed him where you said, hammer the earth in as tightly about the roots as you would a post; unless the earth is packed in tightly so that every root can touch the soil, the root might as well not be there. He replied that it was, in his expression, 'tarnal nonsense, guess he knowed how to plant a tree.' But remembering his failure the year before, I insisted; but sure enough, over half died, and the balance lived but a sickly life through the whole summer." It so happened in the course of his travels the writer of this happened near to the residence of the writer of the letter, and had one of the trees taken carefully

out. Sure enough the earth had been rammed in hard enough over the roots. But it was over the roots and that was all. There was none in and about the roots. The very matted condition of the roots was against the earth getting in and about them. The pounded earth had formed an arch over the mass of roots and not a particle of earth was through them. Not one in a hundred of the fibres were in contact with the earth, and of course they all dried up. If the trees had a few prong-like roots the mere pounding would have been enough to get the earth tightly about them; but when a tree has a mass of fibres, the man with a little sense lifts the tree gently up and down, so that the loose light earth may fall into every crevice, even assisting it with his fingers or a fine stick; and then, after he has the earth surely in and around every root, he pounds it down as firmly as possible, in order that the earth may be tightly about the roots. The fact is, the advice we gave was not followed, and it is generally so in the cases to which we have referred. We do not know that we can give a more seasonable hint than this in planting trees: The first and essential point is, to get plenty of roots, and then to see that the earth is not only put into every crevice among the mass but that it be pressed and hammered in as tightly as possible.

Wherever any part of a tree does not grow freely, pruning of such weak growth, at this season, will induce it to push more freely next year. All scars made by pruning off large branches, should be painted or tarred over, to keep out the rain. Many fine trees become hollow, or fall into premature decay, from the rain penetrating through old saw cuts made in pruning. Also the branches should be cut close to the trunk, so that no dead stumps shall be produced on the tree, and bark will readily grow over. Many persons cut off branches of trees in midsummer, in order that the returning sap may speedily clothe the wound with new bark; but the loss of much foliage in summer injures the tree, and besides, painting the scar removes all danger of rotting at the wound.

Some judgment is required in pruning flowering shrubs, roses, etc., although it is usual to act as if it were one of the most common-place operations. One of the most clumsy of the hands is commonly set to work with a pair of shears, and he goes through the whole place, clipping off everything indiscriminately. Distinction should be made between those flowering shrubs that make a vigorous growth, and those which grow weakly; and between those which flower on the old wood of last year, and those which flower on the new growth of next season, as the effect of pruning is to force a strong and vigorous growth. Those specimens that already grow too strong to flower well, should be only lightly pruned; and, in the same individual, the weakest shoots should be cut in more severely than the stronger ones. Some things like the Mock Oranges, Lilacs and others, flower on the wood of last year—to prune these much now, therefore, destroys the flowering; while such as Altheas, which flower on the young wood, cannot be too severely cut in, looking to that object alone.

COMMUNICATIONS.

SHADE TREES FOR FLORIDA.

BY A CONNECTICUT SUBSCRIBER.

In a recent number of the MONTHLY some one asked about street shade trees for Florida. No one who has seen the great variety that make their home in her forests ought to be troubled about a choice. I say at once, plant the trees indigenous to her soil. As to the China and Tulip trees which you name, the first is insignificant in size and has no special grace or dignity. Aside from fragrant flowers and a good summer shade, it does not fill the bill of a fine street or lawn tree for Florida. The Tulip tree I do not believe will flourish there. I never saw it growing in the State.

For her broad avenues or parks no trees can rival the grand ship-timber Live Oak, or the stately evergreen Magnolia. For narrow streets and areas the smaller evergreen oaks of Florida and her flowering maples have a fitness and beauty unsurpassed. The fact is, that throughout the Gulf States, and in South Carolina and Georgia, no one need go outside their forests to know what trees to plant.

The smaller evergreen oaks have a special duty in a climate where there are many hot days when frosts and the wintry blasts possess the North. My first entry into Florida was on a very sultry day, about the last of February, 1864. The evergreen oaks of Jacksonville were gladly welcomed by the soldiers, who tramped along her streets from transports. Their full robe of foliage and the broiling sun cheated the imagination with a semblance of summer. There are many such sultry days all through Florida's delicious southern winter. On the 23d and 24th of December, 1864, the weather was warm enough to make a full summer garb delightful.

As to the evergreen Timber Oak and Magnolia grandiflora, no trees excel them in grace and dignity. A Live Oak tree, draped with breeze streaming moss, rivals the queenly New England Elm.

ORNAMENTING GROUNDS.

BY A. G. LEWIS.

The great pleasure I enjoyed with my flowers and plants, in the summer just over, has induced me, as usual, to care for them in the winter. Having no greenhouse, I tied carefully my century plants, twelve of them, each one separately, so as to get them in through the doors; and tieing them enables me to store them away very compactly. My Yuccas (aloefolia) take up very little room, although one is eight feet high. I have had it many years: they need scarcely any attention in winter. Without the above two varieties of plants I would be unable to change so many times the appearance of my place as I do. I grow them in pots and boxes. At times I take them near the front, then near the hall door. My front yard is 25x75. My lot runs 150 feet back. My back yard is all in flowers. If a part of it goes out of bloom, or falls short for a time, I form some design there, using my Agaves, Yuccas and other curious plants. On days in which citizens jubilate my rare plants are brought out in some conspicuous way. I at least am satisfied. It pays me to grow Century plants, Yuccas, Aloes, Jerusalem Cherries, Cannas and Caladiums. The latter I place in a box as if they were onions, and put them in a warm place in the cellar—no water in winter. My Gladiolus', Tigridias, and such bulbs, I hang up until needed to plant out. I have too many varieties of hardy plants, roots and bulbs to describe here; but I must say all act their part well in keeping up a grand sight, from the first appearance of the little Snow-drop and Crocus until November, when the Pansy and Chrysanthemum seem to dare frost and snow. I am very partial to hardy flowers, on account of the perpetual satisfaction they give. But house plants, or tender plants, are indispensable to mix for good results; also annuals and biennials; and, for those lovely vines that grow and bloom from seed annually, God be praised. *Youngstown, O.*

A LAWN GRASS FOR THE SOUTH.

BY H. W. RAVENEL.

In December number of GARDENERS' MONTHLY, a correspondent from Charleston inquires about the planting out of Bermuda grass. The usual mode is by chopping the root stems into small pieces, so that they have one or two buds to each piece. A feed chopper would answer the purpose very well, if pieces are not cut too small.

As a lawn grass Bermuda has the objection of being top-killed in winter. When well set, it forms a beautiful green carpet all summer, but at the time when it is most wanted to relieve the dreariness of the winter aspect, it is only a surface of dead, dry leaves. A good lawn grass has long been a desideratum to the Southern country; something that will stand our hot and dry summers, and retain its green foliage in winter. It is believed that the question has now been solved, at least for the sea-coast region, in the use of one of our native grasses, Stenotaphrum Americanum (Rottbœllia dimidiata of the old botanists). This grass grows all along our coast region, forms running root stems like Bermuda and strikes root at every joint, with a broad flat-lying leaf, of a rich green color, and spreads rapidly on good soil. It has a more prostrate habit than Bermuda, and forms a really beautiful sward.

The large Marion square in Charleston, covering several acres, is set in the grass, and there are numerous other smaller lawns of it about the city. So far it seems to meet all the requirements of a superior lawn grass in that region. The question now is, how far in the interior will it flourish. Will it bear successful removal from the damp saline atmosphere of the sea-coast?

We are giving it a trial here in Aiken, 120 miles inland. The growth of our trial patches during the past summer, (with a very dry autumn) is all that could be desired. If it stands over our winter weather—a few degrees colder than the same latitude on the coast—we will be encouraged in the belief that we have, at last, a superior lawn grass for the South. *Aiken, S. C.*

EDITORIAL NOTES.

ROSA MICROPHYLLA.—In 1862 Dr. Maximowicz discovered near Lake Hakone, in Central Japan, the original type of the Microphylla rose in a spontaneous condition—the species being only known before from the cultivated forms introduced from Chinese gardens. It had solitary flowers with yellowish petals, and is marked in the herbarium of the Botanical Society of St. Petersburg, Rosa chlorocarpa. The fruit is spinescent, and gives the appearance of a small chestnut; large, pulpy and eatable, the flavor by no means

disagreeable. In France, what we have for Red Microphylla, is often called the old purple, as we judge from a note in the *Journal des Roses*, from which we condense these remarks.

They have now started the improvement of this class, and have already Triomphe de la Guillotiere, raised by Guillot in 1864; Premier Essai, by Geschwind in 1866; Imbricata, by Ducher in 1869; and Ma Surprise, by J. B. Guillot in 1872.

RETINOSPORA FULLERI—is a sport from R. aurea plumosa, but instead of the golden tint of the parent, is of a delicate pale green. The branches and foliage are also slenderer. The original plant on the grounds of Mr. A. S. Fuller, of Ridgewood, N. J., is about six feet high. Mr. Fuller is fortunate in observing and perpetuating these pretty sports. George Peabody is one of his discoveries.

DOUBLE EVERGREEN CANDY TUFT.—The single is well known in American gardens as a very pretty early-flowering plant. A double one has been introduced by Messrs. Schmidt, of Erfurt.

THE UPRIGHT ELDER.—Sambucus pyrimidata (S. columnaris of some catalogues) is the "newest novelty" in French gardens.

STAPHYLEA COLCHICA.—This is a species of Bladder-nut from the South of Russia. It is very much like S. Bumalda from Japan, already in cultivation in American gardens, but it flowers later, and has larger bunches of flowers. There are besides these two, two others, S. trifolia, the American, and S. pinnata, an English species, not often seen in gardens nor particularly ornamental. The American is not showy but sweet-scented. Even the orchard Oriole, an insectivorous bird, has been caught tapping its sweets.

SPIRÆA ARUNCUS.—A grand plant, not by any means so abundant as it should be in our gardens, owing to its very distinct and effective appearance. Of course there are positions in the garden where it would be out of place, but there are many others to which it would give additional beauty. We have yet much to learn or appreciate in the arrangement of hardy plants. Here is a plant which may be fittingly arranged in the shrubberies, by the margins of lakes, surrounded (taste would suggest) by dark foliaged subjects, such as the copper beeches or nuts, when the white feathery plumes would be seen to much greater advantage than otherwise disposed. I may say, for the benefit of those unacquainted with the plant, that it grows from 3 to 4 feet high, with large divided foliage, and immense plumes of white flowers, forming when established most conspicuous objects. I lately saw several masses 3 and 4 feet in diameter, and as much high, and nothing could surpass their unique beauty.—*T., in Gardeners' Chronicle.*

SPRUCE AND PINE HEDGES.—A correspondent of the *Gardeners' Chronicle* was surprised to see a hedge of the Norway Spruce in Russia "clipped as a Hawthorn hedge." We believe these hedges are not known in England. In America, Norway Spruce, Hemlock Spruce, and even Scotch and other Pines are in common use, and are found when trimmed to a conical form to make as durable and effective hedges for ornamental purposes as any one could desire.

SCRAPS AND QUERIES.

HANDSOME CONIFERÆ OF THE ROCKY MOUNTAINS.—A rare lover of Coniferæ says of species he saw in the lower ranges of the Rocky Mountains: "Of all the Western pines P. flexilis pleased me most; next to this I would place P. Murrayana, both for ornamental purposes. The first is superior to P. cembra although similar in general appearance. If I were a nurseryman and twenty years younger I would get up a good stock of these two species of pine, because I believe they will become very popular when known."

BERMUDA GRASS,—Mr. E. S. Carman says: "I can tell 'R. L. L.' of Charleston, S. C., that his plan of cutting up Bermuda grass and sowing the cuttings will be entirely successful if he don't allow them to dry out too much. It may interest him and others of your readers to know that seed of the true Bermuda grass (*Cynodon dactylon*) has been offered for sale of late years."

DESTROYING LICHENS ON THE TRUNKS OF TREES.—A subscriber of Newport, R. I. says: "Will you oblige me by giving your opinion as to the best application (wash) for removing or preventing the growth of lichen on the bark of certain trees. I have heard recommended a solution of potash—common whitewash and kerosene oil. In this damp climate, the growth of many trees is much retarded (and in some cases young trees are killed) by this fungous (?) growth. The Elms and Pear trees suffer most, while the Horse Chestnut, the Sugar Maple and Birches seem to enjoy an immunity. An answer in the columns of your MONTHLY will greatly oblige."

[Trees which have smooth bark, or trees which have rough bark only after a number of years, are not very liable to be disfigured. The lichen grows only on decaying bark. If the tree grows so rapidly as to throw off the decaying bark lichens will not trouble them much; hence manure or rich soil is a great help to keep down this nuisance.

Where the lichen has gained a foothold, such washes as suggested will be effective, and without injury to the tree. Indeed the trees will be benefitted by the application.—Ed. G. M.]

THE VICTORIA LILY AT NEW ORLEANS.—Dr. Richardson says: "The statement in the last GARDENER'S MONTHLY that Victoria regia was successfully grown last season in my garden pond, without artificial heat, is strictly true; but the flowers were twice as large as mentioned, the largest having measured twelve inches in diameter. The plant was transferred from the stove early in June. The largest leaves were nearly six feet in diameter. I may add, that no agitation of the water was employed except that produced every day or two by the current from the hydrant. I am convinced, however, that the plant would have done better if the water had been kept at one even temperature by stirring it frequently from the bottom where it was always several degrees cooler than at the surface. I am indebted to Mr. Sturtevant, of Bordentown, New Jersey, for the seed."

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

VANDA CŒRULEA.

BY J. MURCHIE.

This fine plant has been in flower with me since the last week in September until now (Nov. 12th), and as I see some of your correspondents are interested in Orchids, I send you a few notes on its culture. The plant is very beautiful of itself. It is evergreen, with graceful pendant dark green leaves, lighter beneath, and from eight to ten inches long. The flowers are large, four inches across; pale blue in the sepals and petals; the lip small and much deeper in color. The flower stem is either erect or slightly pendant, and bears generally from eight to twelve flowers. This plant, like many others, is best cultivated in baskets, especially by those just beginning the cultivation of Orchids. It makes a splendid pot plant, but in this case requires more care and is much more liable to injury from over-watering. In filling the baskets the material recommended for nearly all other Orchids is used—Sphagnum moss, broken charcoal or crocks, with a few pieces of turfy peat, if obtainable, added. When grown in pots care is necessary to have the drainage perfect. The same material should be used in potting, but should not be packed nearly so firm in the pots as in the baskets, so that water will pass right through, no matter how much is given. It should be kept moist at all times of the year, but requires much less water in the winter season; only enough to prevent anything like shriveling should be given from November to March. When it begins to grow water should be increased. In June, July and August it should have a good syringe every day, or even twice a day. Success in growing Orchids depends more on moisture and temperature than on the material in which they are growing. Sudden changes of temperature have more to do with failure in their cultivation than anything else, and therefore should be carefully avoided. V. cœrulea will winter well in a night temperature of 50° to 55°. This is the season of rest, and when water is given it should only be applied to the roots. When unduly excited by moisture and heat, it will grow all winter. This should be avoided, if possible, especially where the plants are grown as mine are, with a mixed collection of other plants. The flower stem makes its appearance after growth is completed. When the flowers begin to fade is the time to begin the resting season, by withholding water. It produces its flowers very freely, and amply repays good care. It is a native of Northern India.

Sharon, Pa.

BEGONIA METALLICA.

BY MANSFIELD MILTON.

The large bronze-colored leaves of this comparatively new Begonia are quite distinct from any other variety. The habit of the plant is robust,

symmetrical, and well-branched from the base. The leaves rising on long petioles give it a free and graceful appearance, showing off the bright red veins on the under side of them. The flower is similar in color to what is produced on the Rex section, only forms larger trusses and on long stalks from the axils of the leaves. It can be easily grown to most any size if the same treatment be given it as required by the Weltoniensis section of Begonias. Propagation is effected by cutting the stalks to single eyes and by leaves, the same as adopted with the Rex section.

Youngstown, O.

NOTES ON ORCHIDS AND THE VICTORIA REGIA.

BY J. H. LESTER.

Your very interesting number for November reminds me to say, with regard to Orchids, that my experience coincides in many respects with that of your correspondent "Epiphyte." Orchids here, however, seem to come into bloom earlier than they do in more northern places.

Phalænopsis Esmeralda has been in bloom with me since June, and promises to remain so all winter. P. Schilleriana comes in February and remains in bloom until May. P. amabilis and roseum will bloom all the time, if I let them; but it weakens a plant too much, as it must be very strong to make leaves and bloom at the same time. I have had Lælia albida on crockery blocks for two years, without any sphagnum or anything else, with five and six breaks, and they have been in the open air, partially shaded, from May to October. I have been told often during summer that I would lose them, but I have a way of my own of doing some things. They make a better show than anything I grow from December to February, blooming with Chysis bractescens and C. lævis and Coryanthes macrantha. Ninety days of 90° is a little too much for Cattleyas, but we get some flowers once in awhile. The same will apply to Odontoglossums and Epidendrums. With Oncidiums, Saccolabiums and Vandas we do much better.

But the crowning glory of all the flowers on this place the past season was the Victoria regia. The seed was procured from Mr. Sturtevant, at Bordentown, N. J. I started the seed on March 16th, and the plant was fit to set out about June 1st; but the season was cold here and I did not think the water warm enough until the last week in June. On October 1st the largest leaf measured 5 feet 7½ inches—inside the ring—in diameter, but the plant did not have half a show. The pond is only about 30 feet in diameter, and contained also two plants of Nymphæa Devoniensis, one each of N. dentata, scutifolia and cœrulea, besides an Egyptian Lotus—Nelumbium speciosum—as well as Trapa nutans, Limnocharis Humboldtii, Pontederia crassipes, and some other things. The first flower opened October 4th, and it perfumed the atmosphere around the whole block; and if one may be allowed to judge from appearances and the expressions of pleasure, between two and three hundred people were very much delighted thereby. The second flower came five days afterwards. At the suggestion of a gentleman it was measured, and was found to be exactly 12 inches in diameter. It is sometimes difficult to get a good measurement, as the petals often reflex as fast as they open.

By the way, there is something about this flower that I have never seen mentioned in print, although I have read many descriptions of it. The flower is a different thing altogether the second night from what it is the first. The first night three rows of snowy petals open and one row remains closed. These latter open the second night, are streaked with red and expose the crown, which is not visible the first night. I may add, that after the plant was put into the pond it had no artificial heat whatever.

One writing from here is supposed to have something to say about the Exposition. Well, to make it short, it is going to be the biggest thing I ever saw—and I saw the Centennial. The department that will have most interest for us is, to all appearances, in good hands; and I hope to see all my friends here this winter.

Gardener to Prof. Richardson, New Orleans, La.

THE RICHARDIA ÆTHIOPICA FROM SEED.

BY ERNEST WALKER.

A note I observe on page 299 of October GARDENERS' MONTHLY, says: "The common Calla rarely produces seeds." This, I presume, means naturally; as with a little care it produces seeds quite readily. I have on several occasions fruited it, and this summer grew a number of plants of the Calla from seed of a plant fruited last spring. The trouble I observe to be the tendency of the spadix to decay at the base, in a moist atmosphere and during the cloudy weather of winter. During fertilization the flower-stalk and flower stand upright, and the moisture suspended in the greenhouse atmosphere settling down collects in the throat of the spathe; then the abundant quantity of pollen secreted falls down and collects, and absorbing moisture soon begins to decompose, speedily communicating decay to the base of the spadix and to the ovaries.

In the open air and sunshine evaporation would prevent this evil, but during cloudy winter and in the moist atmosphere of the greenhouse, we found we must depend on other means. All know that moisture settles and that dry or heated air rises. Acting on the suggestion of this principle, we tried bending the flower-stalk over (not breaking it), thus inverting the flower, to accomplish the double object of allowing the superfluous pollen to fall out after the flower is fertilized, and to prevent moisture from settling inside the spathe. The inverted flower also sheds off water when watering the plants. In this way I have experienced very little difficulty in fruiting the Calla.

However, spring or after the middle of March is the best season for fruiting the Calla, and it is desirable to let the developing fruit hang over the side of the bench, or where it will get what light and sunlight there is.

A flower fertilized about the middle of March requires about six weeks to ripen fruit, which resembles that of the Richardia maculata, and becomes bright golden yellow as it matures. The berries, crowded together on the short axis, contain from two to six seeds each, which are smaller than those of the Richardia maculata, and require a longer time to germinate. *New Albany, Ind.*

BEGONIA FLORIDA INCOMPARABILIS.

BY GEO. C. BUTZ.

This was sent out last spring by Haage & Schmidt, of Erfurt, who describe it as a hybrid between B. semperflorens and B. Schmidti, with leaves much like the latter and the blooming qualities of the former; the color of the flowers being a soft pink, its principal recommendation being, however, its value as an out-door bedder.

Of a small paper of the precious seeds three plants were obtained, which grew vigorously and bloomed profusely in the greenhouse all summer; but the plants do not answer the above description fully. The plant and flowers in all respects looked not much unlike the common B. odorata, except that the habit was much more dwarf and compact, and the flowers, always in abundance (as the name implies), had a slight tinge of pink, instead of pure white as in B. odorata. This touch of color, I have no doubt, would have been greatly intensified in the open ground, as is shown by other varieties of Begonias; but there is nothing about these plants to suggest B. semperflorens as an element in their parentage. This variety is at least desirable as a pot plant.

Can any one give different results, and its value as a bedder in our climate? *State College, Pa.*

PROPAGATION OF DOUBLE BOUVARDIAS.

BY MANSFIELD MILTON.

There is a general belief among a good many florists that to propagate Alfred Neuner and Gen. Garfield Bouvardias, top cuttings have to be used in order to preserve their double qualities. That when propagated by root cuttings, they revert to the original single varieties, being what is termed "bud sports." This is incorrect. They can be propagated by root cuttings the same as any of the single kinds, and the flowers be just as double as when propagated by cuttings made from the shoots. Grown with plenty of light and heat, the double kinds are grand acquisitions, but in a cool, moist temperature, they are apt to get decayed in the centre of the flower before the truss is nearly open. *Youngstown, O.*

LINUM TRIGYNUM.

BY CHARLES E. PARNELL.

Linum trigynum, one of our oldest stove or warm greenhouse plants, is one that is rarely seen in cultivation at the present time; but as it is to be found enumerated in a few of the catalogues of our florists, I am induced to call the attention of our amateur cultivators to it as, when well grown, a very attractive plant, and besides, the color of its flowers (bright yellow) is wanting in so many of the plants in cultivation at the present time.

Properly managed this Linum is an attractive warm greenhouse plant, growing from 2 to 3 feet in height by as much in breadth, having erect, smooth stems and oblong, acute, smooth alternate leaves; producing its bright yellow flowers from the axils of the leaves in the greatest profusion during the winter months, the time of blooming depending in a great manner upon the temperature in which the plants have been grown.

This Linum is a native of the East Indies, from whence it was introduced in 1799, and although it has been in cultivation for so many years it is a plant rarely met with. It is a plant easily cultivated, growing freely in a compost of two-thirds

well decayed sods, one-third well decomposed manure, with the addition of a little sand. Mix thoroughly and use the compost rough. The plants should not be over-potted, and care should be taken to drain the pots well, for as the roots are small they cannot endure an immoderate supply of water. During the summer season the plants can be planted out in a well enriched deep border, and liberally supplied with water during seasons of drought. Early in September the plants should be taken up and potted, and on the approach of cool weather brought inside, where they should be given a light sunny situation, and an average temperature of 55°. Water must be carefully given at all times, a liberal supply both overhead and at the roots during their season of growth, and afterwards more moderately. Unfortunately it is very subject to the red spider, and on this account it must be freely syringed at all times, and every available means employed to keep these destructive pests in check.

Propagation is effected by cuttings of the half ripened wood, placed in sand in a gentle bottom heat, and if the young plants are liberally treated and shifted as often as necessary, nice specimens will soon be obtained. Unfortunately it is of no value for cut flower purposes, the individual flowers lasting for a few days only; but as a decorative specimen plant for a warm greenhouse, it is well deserving of attention. The beautiful bright yellow flowers and the profusion with which they are produced for a considerable length of time are all desirable points in its favor. And as it is an easily managed plant nice flowering specimens can be obtained in a short time. I think it deserving of a place in all amateur collections of rare and beautiful plants. And in order to avoid answering numerous queries as to where plants can be obtained, I may be permitted to state here that I have no plants or cuttings to spare, nor do I know where they can be obtained.

Queens, N. Y.

EDITORIAL NOTES.

Specimen Fuchsias.—No subject is of greater interest to the soft-wooded plant growers than the history and cultivation of the Fuchsia. To the present race of young gardeners the giant specimens of a dozen or more years are all but unknown, and the varieties—most of them at any rate—that are now cultivated are not particularly well adapted for growing into specimens. Raisers of new varieties of Fuchsias have conferred great benefits upon a certain class of people, and a very large class it must be admitted; but upon the other hand, if we have gained in size of flower, as we undoubtedly have, we have lost something in habit for certain purposes. This is where variety comes in useful. For instance, many of the old free-growing kinds would cut a sorry figure by comparison with some of the new ones, if size of flower were the only consideration. But there are large conservatories to be filled where the finest variety in cultivation, of dwarf habit, would look a mere pigmy. For this reason, if for no other, it is desirable not to lose sight of the free-growing kinds, at all events until we are furnished with something of equally good habit producing better flowers. Of late years the absence of large Fuchsias from such structures as we have indicated has been most striking to those who remember what the said structures used to be in former days. Plants that may be grown from 6 to 9 feet high in a season are useful, more especially when they are old favorites and beautiful as well. Now is the time to propagate plants for growing into specimens next season. Struck in a gentle warmth, and potted off singly into small pots a week or two hence, they will be ready for starting into growth early in February, a long way in advance of spring-struck cuttings. They should be wintered on a shelf near the glass, and kept partially dry at their roots, but not to an extent that would cause the plants to shrivel or to lose their leaves. In the spring, when they commence to grow, give them a shift into a larger pot, and plunge them in a gentle bottom heat, and they will make rapid progress. It is a singular fact that when the days begin to get long, and the sun attains its full power, Fuchsias refuse to grow as they do in the early part of the year. Hence the importance of having rooted cuttings to begin with in the spring, instead of waiting until the old plants are started into growth and cuttings can be obtained from them. A few of the good old sorts are Fairest of the Fair, Sir Colin Campbell, Roderick Dhu, Madame Cornellisen, Rose of Castile, and Guiding Star.—*Gardener's Magazine.*

Dieffenbachia Jenmanii.—A new species from British Guiana, sent to Messrs Veitch by its discoverer, Mr. G. S. Jenman, Superintendent of the Botanic Garden at Georgetown, to whom we have much pleasure in dedicating it. It is a plant of free growth, sending up several stems from its stout root stock, which also branch as they ascend. The foliage is bold and spreading; the leaves, which are

of oblong-acuminate form, are from 10 to 12 inches long and from 3 to 4 inches wide, with a prominent broad midrib, from which the lateral nerves branch obliquely and symmetrically on each side. The ground color of the leaves, a rich bright glossy green, is relieved by a milk-white band at every lateral nerve and by a few white spots interspersed between the bands. The bands and spots are semi-transparent, so that the foliage has the same variegated appearance when viewed from beneath

as from above. The stately aspect of the plant together with the striking variegation, renders it one of the handsomest of stove variegated plants.

DINNER TABLE DECORATIONS.—A correspondent of the London *Journal of Horticulture* says: "Above all avoid overcrowding. In general few plants are wanted at the dinner table; at one for four persons, I should put two Crotons, Chelsoni or interruptus aureus, one on each side of the centrepiece, or two Asparagus plumosus canus, and two Rivina lævis, one at each end to correspond. Their red fruits show up well, but do not let them stop in more than one night, or their berries may fall. The plants near the centrepiece should be 6 inches lower than the centrepiece, the end plants to be half the height of the centrepiece. As many small glasses as there are guests should be arranged, each with a buttonhole."

THE TASTE OF AN AFRICAN PRINCE.—It is said that Cetewayo, the great African chief who was taken prisoner and carried to England, thought no flower of the many thousands cultivated in English gardens, exceeded in beauty the Salvia patens. It is undoubtedly one of the most beautiful flowers known. The roots are tuberous like the Dahlia and it is easily preserved through the winter, and yet its handsome blue flowers are seldom seen in these days of cut flowers; the fact that it drops from its cup almost as soon as gathered is perhaps against its popularity.

SCRAPS AND QUERIES.

STEAM HEATING.—"Gardener," Chicago, Ills., asks: "Why is it, if steam is so superior to hot water heating, that none of the old gardeners knew of it. They seem to have run on hot water and never thought of steam?"

Our correspondent is mistaken. Steam heating was used in Great Britain before hot water was thought of; and this was introduced as an improvement on steam. We believe the first hot water apparatus was put up by a Mr. Bacon, of Aberamen in Glamorganshire, in 1822. A Mr. Wm. Atkinson was the inventor. Steam had been used before.

TAR ON HOT WATER PIPES.—The following letter and reply have been kindly handed to us by Mr. Peter Henderson:

POTTSVILLE, December 5th, 1884.

"Dear Sir: I built four greenhouses last summer and put 2000 ft. of pipe in for heating, that was dipped in gas or coal tar. It is injuring my roses and I would like to have your idea as to how to remedy it without taking out pipe. I am at present changing the water in the pipes which has been in since September. There is a great deal of gas-poison passing out with the water. An early answer will very much oblige,

Yours truly, J. M. M."

"J. M. M.," you have been unfortunate in making the same blunder that is made by some florists, again and again each year, in the face of repeated warnings that have been given in the GARDENERS' MONTHLY and other magazines, about the dangers of using coal or gas tar on the iron pipes used for hot water or steam in greenhouses. The changing of the water as you propose will not abate the mischief; nothing whatever will do any good except to take down the pipes and burn every part of them where the gas tar is. They must be heated nearly to a red heat so as to expel the gas, as the tar penetrates right through the grain of the cast iron. If you do not take out the pipes and burn them you will find that your roses will remain leafless as long as you continue to fire—do it at once or you will throw your coal and labor away the entire winter. I receive two or three such letters as yours every year—some of them have tried scraping the iron and have used chemicals with the hope of neutralizing the gas, but all without effect—nothing will expel it but heat. PETER HENDERSON.

DISEASES IN ROSES.—"J. G. H." New York, writes: "I would like to have you inform me through the MONTHLY what kind of a disease it is that has got into the roots of my plants. The rest of the roots are the same as the piece I send you. Will you please inform me how I can prevent it? I am losing all my plants with this disease. And can you tell me what kind of disease this is that has got into my roses? The leaves at first have from one to four black spots on them, then they turn yellow and drop off; the roots seem to be all healthy enough. You can see by the leaves I send you how they look. Will you please tell me how I can prevent this disease from going any farther. It started first in the La France and is going through the whole house."

[The roses are infested by a root aphis, and also by the larvæ of some small insect which bore into and make their home in the roots in much the same manner as their larger fellow creatures do in the stems of apples and quinces. After they have become so abundant as they evidently are on these, we know of no remedy but to take out the whole lot, have entirely new earth, and begin anew, and it should be an especial care that the new plants should be wholly free from the insect. Their presence can be readily detected by a strong pocket lens, which should be always present in a gardener's pocket, as well as a pocket knife or a pencil. The presence of the insect can then be readily detected on the main roots by a granular smutty surface which is really the excrement of the minute insect, or the decaying tissue caused by the insect work—or there may be small galls, too minute to be seen by the naked eye on the annual fibres. It is the great fault of cultivators, that the roots of their plants are seldom examined; indeed the majority of plant cultivators are wholly ignorant of roots, their nature and requirements.

The discolored leaves come from a fungus which works beneath the surface of the leaves, and cannot be reached by any external application. In our opinion it is not one of those which attack healthy vegetation, but only those, the vitality of which have been already somewhat impaired. Quite likely the leaves are from the plants which have been already weakened by the root fungus above alluded to.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

The writer of this was invited recently to look at a garden where, in the proprietor's language, "bad luck" prevailed. His ornamental trees, that had been "pounded in" when planted, died for all, and his fruit trees, both of "large" and "small" fruits, were a general failure. The gardener was a remarkably industrious man; and he had the happy faculty of knowing how to keep everything clean and neat around him, and he was a great favorite with his employer, as he deserved to be. But the best of us have a weakness, and his was, that as he had "served his time" in the famous gardens of Sir Bountiful Buncombe, of Buncombe Hall, he thought he "knew his business," and, to use a favorite expression of his, it was "'tarnal nonsense" to suggest that there was anything to learn from a book or a magazine.

Walking with the proprietor through his remarkably neat and well-kept garden and orchard, the first complaint was, that the standard pears all lost their leaves early in the summer, and on the leafless trees the fruit did not ripen, notwithstanding the good culture given by the gardener. The trees were dug under carefully and manure applied, but the conclusion came to was that the wrong sorts had been chosen. We ventured to point to a few large and healthy trees in a neighbor's fence corner, but had only for reply that the owner of that place was wholly ignorant of good gardening. The next trouble was with the dwarf pears; they grew amazingly, and flowered every spring profusely—white as a snow bank with blossoms—but "a late frost or something" always destroyed them. The trees were carefully summer pruned, and growing shoots were cut back like osier blocks to the stumps from which they sprung. We started to say something about the influence of pruning on the vital forces, and the connection of the vital forces in starting the young fruit; but were cut short by the information that in Sir Bountiful's garden the great effort was to get all the spurs possible on a pear tree, and we could not have spurs without frequent prunings. The apple orchard had been planted little more than fifteen years, but were commencing to die from some unaccountable reason. They had been remarkably well cultivated, and cared for; had grown well, fine leaves, borne remarkably good crops of fine fruit; but the trouble now was that the fruit easily rotted, the leaves in summer were golden and had powder all over them, and the short branches died back to the main wood. It was thought that the manure used was "too rank" and induced late growth. Sure enough there was an apple tree of much older growth in his stable yard, right in the midst of the rank manure, to which we called attention, but that was merely "some hardy kind that would stand any bad treatment." The grapes rotted, mildewed, and we don't know what, all for want of "proper selection of kinds adapted to the locality;" but again a grand vine with a stem as thick as one's arm, and also growing out at the end of the manure pile and covering hundreds of square feet of wall,

was referred to, but that was only "a common Concord that would stand anything."

The worst complaints, however, were in regard to blackberries and raspberries. New kinds were continually being bought, to do well for a year or two, but finally to degenerate. One of his raspberry plantations of Cuthbert had been carefully tied to a cross rail about two feet from the ground. The space between the rows was carefully dug and kept clear the whole summer. This year the growth was not much more than a pipe-stem in thickness, and did not actually reach in many instances the cross-rail. The reason for the failure was, that Sir Andrew Somebody had shown nearly a hundred years ago, that varieties would surely wear out. It so happened that at the end of the raspberry rows was a place where grass from the lawn, weeds, and so forth, were thrown into a heap. Some of the raspberry suckers had reached to the boundary of this heap, and had canes four or five feet long, as thick as one's little finger, at ground, and large, healthy grassy-green leaves from the ground to the apex. Beyond the remark that it was "queer," no further thought seemed to be given to our reference to them.

Well, our readers know that to have fruit trees healthy and vigorous, in our hot and dry climate, the feeding roots must be encouraged to keep always at the surface,—but that we must take pains to keep that surface dark and cool. When they get this no ordinary manure will ever be too rank. The vital power will seldom meet with any unbearable strain, and we shall find under such practices that though the teaching at Sir Bountiful Buncombe's was excellent as far as it went, the experiences of an American climate may be added to the lessons of Buncombe Hall with great advantage.

COMMUNICATIONS.

NEW FRUITS IN NEW HAMPSHIRE.

BY JAMES M. HAYES.

The season of 1884 cannot be classed as a successful one for the small fruit grower and orchardist. The spring was unusually backward, and hard frosts continued until nearly June; that of May 30th being the most severe ever known at that season of the year. The early strawberries were in full bloom and those of the older varieties that withstood the freezing best with us were the Crescent. Of the new varieties the Manchester came out best and bore a handsome crop of smooth fine berries, and of the tested varieties this promises to become a leading berry in the market. The Old Ironclad and Piper seemed to be much injured by the frost. We planted our first Atlantic and James Vick in the spring of 1884, both varieties run well and have the appearance of being hardy and vigorous. Of the newer raspberries the Cuthbert is far the most vigorous and is everywhere giving satisfaction. The Hansell does not seem to be so vigorous, but it ripens early and the fruit is so good that it must become a favorite with fruit growers. Of the cap varieties the Louhegan is much esteemed and promises to be one of the best. The Early Harvest blackberry was killed to the ground last winter. It has made a fair growth the past season, and if it winters without killing may prove of value. The Snyder has thus far proved the best blackberry for the North and is growing in favor from year to year. We saw the first New Hampshire grown Keiffer's Hybrid pears the past autumn exhibited at one of our local fairs, but as they were not matured we cannot give an estimate of their worth. Tree agents have been selling large numbers of the Russian mulberry, representing it as of great value as an orchard fruit and the tree as fine for shade and timber. We have two small trees, sent us from Minnesota. They do not show remarkable vigor and at their present rate of growth will be long in making timber trees. At one dollar and fifty cents each (the price asked by tree agents), we should not invest largely. Fruit growing is progressing slowly at the North; an indication of this advancement is the better culture that growers are giving their orchards.

Dover, N. H.

THE SHAFFER RASPBERRY.

BY MANSFIELD MILTON.

A good many fruit growers object to the color of this raspberry, asserting this fault will tell against it on market. I think this peculiar color will be a benefit to its sale when it becomes better known. It is one of the best flavored black caps we have got; and as soon as it has been generally tested along side the other varieties for quality, hardiness and productiveness, it will be much sought after. Its color will be to its advantage by distinguishing it from the many other kinds which are similar in color but different in flavor. For a family berry I do not know of a better among the caps. It not only produces a full crop of fruit as a main crop, but continues to fruit more or less until frost. Being a strong grower it requires to be planted not less than seven feet between the rows and four feet between the plants.

Youngstown, O.

EDITORIAL NOTES.

IMMEDIATE EFFECT OF CROSSING ON FRUITS.—The New York *Independent* says of the meeting of the American Association for the Advancement of Science, recently held in Philadelphia:

"In the regular sessions three of the most eagerly anticipated papers, on the identification of the plants and animals of the Greek authors, the influence of isolation on vegetation, and the immediate effects of cross fertilization on the strawberry, were not read at all. The last was to be by Professor Lazenby, who, it was understood, had produced the fruit of Sharpless strawberries on some pistillate form, by the direct influence of the pollen of the former variety. The inference would be, that a pistillate variety of strawberry has really no fruit of its own, the fruit being, in all essential points, that of whatever it may have had pollen from. It was very much regretted by many that such a very important physiological paper should not have been reached, in order to follow closely the professor's experiments. If they should be deemed conclusive it would be very strange that, in the past, when it was the custom to grow only pistillate varieties of strawberries, with any good staminate kind as a fertilizer, there never seemed any doubt anywhere, of the identity of the pistillate variety. Hovey's Seedling, for instance, was always readily identified anywhere, no matter what variety may have been used as the pollen bearing parent. Still, as it is well known there is an immediate effect on Indian corn by crossing, no one can say how far this immediate influence may extend, and hence the desire to hear Professor Lazenby's paper."

To which we may add that it would be well worth while to go over the matter again with some kinds so very distinct that the eye as well as the taste could distinguish the difference. For instance, instead of such closely related kinds as Sharpless and Manchester, take Lennig's White and Manchester,—or take a long berry like the old Lady's Finger, with a regularly formed round berry,—or even a kind that almost always has a coxcomb form, to be used as a fertilizer, for one of regularly uniform outline. For ourselves, we know of scores of instances where certainly no immediate influence has resulted, while, with the exception of corn, there are few unchallenged facts on the other side.

FORCED FRUITS IN ENGLAND.—In the old world some of the best skill was employed in forcing fruits, but the introduction of steam is changing all this. Fruits from the tropics can be now transported toward the arctics nearly as good and at far less cost than the skilled gardener can raise them, and one of his most fascinating occupations is going, if not gone. In England the culture of the pine-apple still engages considerable attention, but last year the West Indies poured into the laps of the Londoner first-class fruit for twenty-five cents apiece. Some of the second-class quality were sold freely at eight cents each. In the United States the steamboats and railways have long since almost destroyed the garden culture of the pine-apple.

NUMBER OF FRUITS IN THE OLD WORLD.—The *Journal of Horticulture* says that in a contemporary of recent date some enthusiast has put himself to the trouble of ascertaining how many varieties of fruits are known at the present time, with the following result:—Cherries, 209; Apricots, 60; Peaches, 239; Pears, 1087; Plums, 297. Apples have not been taken into consideration.

In America we believe the number of apples known exceeds two thousand.

CULTURE OF THE BANANA.—The banana is an annual, the fruit coming to maturity about a year from the time that the shoot is planted, the stem of the plant then attaining a height of eight or ten feet and perhaps thirty-six inches in girth. There are a good many Plantian walks in the island of Jamaica, varying in size from 25,000 to 200,000 trees; but they are for the most part cultivated by the small settlers in the different parishes, and prove a source of great profit to them. The method of cultivation is simple. The land is cleared by the aid of a primitive and ponderous hoe, a hole is dug in which is placed a "sucker," and Nature is left to do the rest. Unless the season be one of exceeding drought the plant is certain to grow and to bring forth its fruit in from nine to twelve months. In well ordered plantations the trees are usually planted from 12 to 15 feet apart in the form of squares. The bananas are taken to market, not unfrequently a distance of 20 miles, by means of clumsy, springless drays and carts, upon which thirty or forty bunches are indiscriminately placed with some attempt at wrapping them in the dried leaves of the plant, and are chafed and scarred by the wheels of the vehicle, and the weight of the driver, who generally makes a comfortable perch for himself on the top of the whole. The defects do not present themselves until the fruit has been in the ship's hold some days, when they result in unsightly dark patches.

The total value of the green fruit imported into New York in 1882 was given as follows in the Custom House returns, in dollars:

Oranges and Lemons	$ 770,601
Grapes	77,278
Pine apples	20,522
Bananas	82,323
Miscellaneous	12,000
Cocoa-nuts	353,502
	1,316,226

—Gardener's Chronicle.

AMERICAN PEACHES IN FRANCE.—M. Catros-Gerand, in the *Revue Horticole*, calls attention to the American peaches, Amsden, Cumberland, Downing, Alexander and Beatrice—the last, however, being English and not American. He praises them as valuable additions to French pomology, and regards them as a type of a new race of peaches hitherto unknown in the old world, and brought about by some new conditions in connection with the new world.

The Editor states he cannot endorse his correspondent's views.

GRAPES ON TREES.—It has long ago been noted that a grape vine will grow faster when growing over a tree than when trained in any other way. Some observers have from this fact tried to grow grapes successfully on trees, but have always failed. But the observation is of value. We have to try to find out why the grape grows well over trees, and then imitate in our usual practice, so far as we can, the conditions which contribute so much to the growth of the vine in other instances. Mr. Meehan pointed out many years ago, in a paper before a scientific association, what those conditions were. Mr. Crawford, of Cuyahoga Falls, O., has recently called attention to the value of these facts, and it will be be very useful to repeat here what Mr. Crawford says:

"The grape rarely falls when allowed to climb over trees. It matters not what kind of trees, or, whether they be living or dead, if they only have branches that the tendrils can take hold of. Astonishing crops are produced in this way, even on vines that receive no care. The most successful cultivators in the world plant trees and vines together so that the latter may have a suitable support. Many unskilled farmers have blundered into the same method and have had abundant success. A vine will make twice the growth in a tree that it will in a trellis, and where an effort is made to have it occupy both, it is always found that its main energies are expended in the tree. A newly planted vine should have brush instead of a stake, as it has no means of clinging to the latter. If the tendrils can find nothing to take hold of, they continue in motion for a time, reaching in all directions, and this is exhausting to the vine. For this reason skilled gardeners often cut off the tendrils. When growing vines on stakes I have often driven lath nails in convenient places for the accommodation of the tendrils.

"Although grapes do so well on trees without much care, let no one suppose that he can accomplish anything by planting vines at the roots of established trees. The soil being preoccupied, the vine will not have a fair chance. Plant it at a distance from the tree to be covered, and after it has made some growth it may be brought to the branches, where it will take care of itself. On nearly every farm there are worthless trees that might be made to carry bushels of grapes."

JAPAN PERSIMMON.—Mr. Conner, says the *Florida Dispatch*, has raised a persimmon weighing one pound and one ounce. We are waiting for some one to send us figures that will beat this. What have the Norfolk growers to say? Mr. Lipsey, of Archer, Florida, has a tree four feet high that matured one hundred fruit. Here again is a defiance to Virginia to rise up and beat it if she can.

SHARPLESS STRAWBERRY.—Mr. F. Burvenich says in a French publication that this name without doubt was given to this variety in allusion to the fact that it is particularly sweet and highly perfumed, and that it must not be confounded with Sharpless Seedling, a very distinct variety. But the colored plate looks marvelously like our Sharpless "Seedlings."

SCRAPS AND QUERIES.

PROFITS OF ORANGES.—A correspondent from Florida writes, that "orange culture is one of the most profitable enterprises any one coming to that State can engage in, especially if one can manage to sell out his orchard."

PITSON PEAR.—From Stone and Wellington, Fonthill, Ontario. This is a handsome pear; brown, inclining to russet, regularly pyriform, medium-sized, and indicated a fruit of high quality; but the specimen coming so long a distance by mail, had commenced slightly to decay, and hence had not the high flavor we suppose it might have under better conditions.

THE EVERGREEN BLACKBERRY OF THE SANDWICH ISLANDS.—A lady residing in Washington Territory sends a leaf, confirming Mr. Carman's statement that it is but the cut-leaved English Blackberry: "I enclose a small leaf of the 'Evergreen Blackberry' mentioned in November number. It is quite common here, very hardy, free grower, and prolific bearer; indeed, is sometimes

called 'ever-bearing,' for it begins to ripen with the Lawton, and I have known well-ripened, but of course not very sweet berries, picked on Christmas day. When well ripened the quality and size compare favorably with the Lawton. It is very handsome also, but oh, so thorny, and does best trained on a trellis."

[It is a surprise to learn that this kind comes near the Lawton in size. Here in the East they do not reach half that. This, and the double-flowered as well as this, retain the leaves till quite late in the season,—indeed, when a trailing branch gets covered by snow, the leaves remain green till spring. The botanical name is Rubus fruticosus, an English, and not a "Sandwich Island" species, and is the most common form in English hedge-rows. It has the remarkable peculiarity in a blackberry of having very often perennial stems, as in its neighbor, the rose. The writer has seen stems many years old, and among his earliest literary contributions was a paper to the *Phytologist*, describing an unusually old and large specimen. The species probably obtained the name of fruticosus from this fruticose or shrubby character. The leaves are very white beneath and very green above, and suggested to some other botanist the name of Rubus discolor.

It is really a good fruit in the form of the cut-leaved variety, as well as a very ornamental plant to grow.—Ed. G. M.]

FORESTRY.

COMMUNICATIONS.

FORESTRY ON THE PLAINS.

BY T. BENNETT.

Will you allow me to make a few remarks on a subject of no small importance to the nation? The lack of trees on our vast and cheerless prairies has come to be felt as a great national want. Forestry is now a leading topic, and rightly so, for as the population increases wood and timber will be more and more in demand. Are we not losing time inquiring what trees to plant and then drawing out a lengthy argument about them?

The government has given encouragement, and this ought to be a stimulus for great exertion. We will not talk now of improving the landscape, nor of drawing water from the clouds, nor of making the air more pure by the free distribution of healthy gases and exhalations. The absorption of noxious carbonic gases which trees inhale, the domestic uses of wood, and the enhancing of the value of every farm—even in a national point of view—to have five, ten or twenty acres of good woodland on it, can also be passed by now; but it is apparent, millions of trees can be planted and grown by the people themselves, cheaply and quickly, compared with the present movement, and which will make future generations bless the present one if it only acts on the hint given in these suggestions.

Seeds, of the kinds found most suitable, except a mere few, can be collected in the Eastern and Middle States—they are cheap and plenty and made up in one two, four or five dollar packages by seedsmen and nurserymen, with a printed paper around each package giving full directions for sowing and management in the seed bed. The Western farmer who can not afford to buy a large quantity of nursery stock, will very quickly see the point, write for, and order those packages, and will cheerfully sow and care for the seeds.

This appears to me to be the cheapest and best, I might say almost the only way the desolate looking prairie can be made to "bloom" and look like an extended forest country.

Chambersburg, Trenton, N. J.

EDITORIAL NOTES.

VALUE OF TIMBER.—It is now a fact beyond all question that figures in relation to the value of any given tree for forestry purposes, are of no value whatever for a guide for forestry planting, so much of the value of timber depending on the suitability of the soil and climate to the perfect health and vigor of the tree. Hence, what we learn of forestry in Scotland or England is of no use whatever in the Atlantic portion of the United States, because the conditions are rarely favorable to the same tree alike in both localities. The Scotch

pine, the Larch, and the Norway spruce make excellent timber in Scotland. They are trees which love a comparatively moist atmosphere and cool climate; they have vigorous health, and with vigorous health they have sound durable timber. These trees grow in the dryer regions of the world but are not long lived; and with this extra strain on the vital powers an inferior quality of timber follows. This is the reason why the enthusiasm for Larch on the western plains has died out. It was an enthusiasm based on Scotch experiences. What we want for successful American forestry is an adaptation of trees to climate. This can only be determined by actual experiment. In many cases native trees will be far better than any imported species. On the other hand there are no doubt a number of exotie species that would on trial prove at least equal to indigenous kinds. There must be in many gardens by this time large specimens of many kinds of foreign trees, and whenever these have to be cut down we should be glad of notes of their growth or probable qualities.

THE DOUGLAS SPRUCE.—This from the moist climate of Northern California, Oregon, and Washton territory, is just suited to the very similiar climate of England and other countries bordering the eastern side of the Gulf Stream. It is said to be by all odds much the best of all their foreign trees. In the eastern portion of the United States it will scarcely live, and is of no value for forestry purposes. The variety that comes from the Rocky Mountains is perfectly hardy, but has not the lofty, rapid growing character of its Pacific coast brother; and though an admirable ornament for an Eastern garden, is believed to be of no value for forestry purposes where other much more rapid growing trees take its place. The Hemlock is the great spruce lumber tree of the Eastern Atlantic, and possibly no tree can well take its place. On the other hand the Hemlock has been found of no value for forestry purposes anywhere in the old world that we know of.

FORESTRY IN CHINA.—A correspondent of the London *Gardener's Chronicle* says: "I noticed that nearly every garden contained a few specimens of the Chusan Palm, Chamærops Fortunei, which the natives cultivate for the purpose of supplying themselves with fibre obtained from the sheaths of the leaves, to fabricate waterproof capes. Paulownia imperialis, with its very large leaves, was a conspicuous object in one locality, although it did not attain to more than about 15 feet in height. With the exception of some healthy young plantations of Cunninghamia sinensis, the Conifer which supplies China Fir for building purposes, I noticed scarcely any tree planting operations. This is different to the case in the West River districts, where the people devote considerable care to the rearing of Pinus sinensis. The neglect of tree planting in one place, and the fostering of it in the other, is probably accounted for by the facilities of getting the wood to market, which is afforded by the splendid West River in the latter case, while in the former there is no river nearer than 8 or 9 miles to the nearest part of the mountains."

THE CAROB TREE.—This singular tree has been successfully introduced and fruited in California, and as it promises to be one of the most useful trees in the dryer and temperate regions of our country, the following full account from the *Gardener's Chronicle* will have an interest for our forestry readers. The timber is as valuable as the beans:

"The saccharine pods of the Ceratonia siliqua have become an article of considerable importance as a food for domestic cattle, and the export is now large from many of the Mediterranean countries. From Candia or Crete the shipments have been said to reach 180,000 tons annually, from Cyprus 10,000 tons are exported, and from the districts of Tarragona in Spain as much.

"In several of the countries where the tree is largely grown, horses and stable cattle are almost exclusively fed upon the pods. About six pounds a day are given of the crushed pods, raw or boiled, with or without chaff. The meat of sheep and pigs is also greatly improved in flavor by this pod, the fattening properties being twice that of oil-cake; hence Carob beans form a chief ingredient in most of the artificially prepared cattle foods. They contain about 66 per cent. of sugar and gum. The tree is grown in Italy, Portugal, and Spain, the south of France, and most of the islands of the Mediterranean. It has been also carried to South America and India. The produce is annually increasing in Cyprus. The tree grows readily in most soils, and not requiring much moisture or care, its cultivation gives little trouble; however, although the tree grows and thrives without much moisture, the yield of fruit is affected during dry seasons, the quantity being less, and the quality inferior.

"In Crete the trees in the eastern part of the island produce a much finer pod than elsewhere, which realize 1s. a cwt. more than those in the centre of the island. The produce always finds a ready market at Constantinople and the ports of the Black Sea. These pods, in some of the countries where it is abundant, are a great resource to the poorer classes, who eat them in large quantities, particularly in Lent. Containing a good proportion of sugar, they are very nourishing and satisfying when fresh, besides being cheap, and having the virtue of keeping well. As met with here, however, they are hard and leathery, and not very attractive.

"As an economic plant already, it is strange that no attempts have been made by improved culture to transform the pod into a savory edible fruit.

"In Portugal the pods are known under the name Algarobas, and in Austria as Johannes' Bread. It has the reputation of being the food on which St. John fed in the wilderness; but this is questionable, as it was most probably the insect locusts, which are parched and eaten to this day in parts of Africa. In Vienna Carob beans are sold at all the fruit stalls in the streets; and they are even sold in many sweet shops in London and elsewhere, being purchased by children. In Sicily a spirit and a syrup are made from the sweet pods; it has a flavor not disagreeable, and resembling in taste the fruit. Aromatised liquors have also been made from it. In Egypt a mucilaginous refreshing beverage is made from the pods, and they steep in it the fruits of the Balanites Ægyptica."

KITOOL FIBRE.—The Palm, Caryota urens, Linn., is a native of Ceylon, Malabar, Bengal, Assam, and various parts of India. Amongst natives of Ceylon it is known as Kitool; in India it is called Bastard Sago, Coonda pauna (Tamil); Erimpana, or Schundra-pana (Mal.).

It is a beautiful and lofty palm, with a trunk more than a foot in diameter, and 40 feet high. The large bipinnatisect leaves measure 18 feet to 20 feet in length, and 10 to 12 feet across. The fruit is of the size of a plum, with a thin yellow rind, and is very burning and acrid in taste. From the flower-stem an enormous amount of sweet juice can be obtained; as much as 100 pints in twenty-four hours. From this juice Jaggery sugar well known in our markets, is prepared, although it is not the only source, other palm trees yielding it in commercial quantities. The caste who prepare this sugar in Ceylon are known as Jaggeros. The juice is also pleasant to drink when fresh, and an intoxicating spirit, known variously as toddy, arrack, pauna, or pawnee, is obtained by fermentation, and largely used.

The pith of the stem contains a large amount of farinaceous matter, equal to Sago in quality. The natives use this largely for food in the shape of gruel, or a kind of bread. Like its relative, the Cocoanut, Kitool Palm is a source of food and profit to its owner. Elephants make of the leaves their favorite food, and the "heart," or expanded leaves, can be made into a capital cabbage, or pickled, or candied. The woolly substance at the base of the leaves is used in caulking ships.

The fibres or veins of the leaves furnish the Kitool fibre, and it is largely used by the natives for the making of ropes, fishing-lines, bow-strings, brushes, brooms, baskets, caps, &c. Its great strength has earned for it the name of Elephant fibre, and ropes made of Kitool are used to tether and secure wild elephants.

The fibre has long been known in this country, and under the name of Indian gut has long been used for fishing-lines. When made into brushes it is found to be most durable, and some firms will not use brushes made of any other material. It seems to be the best substitute for bristles, as the fibre is strong, tough, and impervious to water. It is, however, rather brittle, and a sudden knock may break it. It can be woven together with cotton for petticoat stuffs, and forms a cheap and flexible fabric for dress-improvers, &c. Steamed and curled, it can be used for stuffing purposes in upholstery, and the refuse may be used instead of hair to mix with mortar for building purposes. When dipped in oil it turns from a dull brown to a beautiful black color, and the oiliness may be removed.—*Journal of the Society of Arts.*

PINUS SINENSIS.—The *Gardener's Chronicle* tells us that the trees of Pinus sinensis adjacent to the Wong Lung Kun Monastery, 50 miles from Canton, are very fine indeed; but they are exceeded in magnificence by those of the So Liu Kun Monastery, secluded at an altitude of about 800 feet, where six of them, within a radius of about 50 yards, in a dense mixed forest of luxuriant trees, averaged 11 feet 7 inches in girth at 6 feet from the ground, and about 150 feet in height. The largest of them was 15 feet 4 inches in circumference. A pine tree which had been blown down and was being cut up I measured, and found its height to have been 102 feet, circumference at 10 feet from the ground 7 feet 10 inches, and it had seventy-five annual rings.

BLACK WALNUT CULTURE.—Mr. Graves, of Texas, ten years ago planted ten acres to walnut trees, by hand, two hundred to the acre, in all two thousand trees. The trees are now nine inches through, and grow at the rate of an inch a year, and when twenty years old they will be worth $25 a tree, making the forest worth at that time $50,000. But this is not all. Last year the trees bore 400 bushels of walnuts, which brought $2.50 per bushel, making $1,000 for the ten acres of land—good interest for land worth $15 per acre. If at the age of twenty years, half of the trees are cut and sold for $25 a tree, or $25,000, the nuts per year from the remaining 1,000 trees will be worth $2,500 a year.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

ON IRREGULARITY IN FLOWERS.

BY DAVID F. DAY.

In your article on Euadenia eminens, published in Dec. No. of the GARDENERS' MONTHLY, I find some observations respecting the regularity and irregularity of flowers, in relation to their attitudes (or positions), which to me are very interesting. Never before had I seen in print any allusion to the subject; but, nevertheless, I can say that it was not to me a new one. In fact I had made it the subject of a paper which I had read last winter before the Society of Natural Sciences of this city and of which a portion will appear in the next Bulletin of the Society, now in the printer's hands. I then took occasion to say that I believed that it was the first time that any portion of the scientific world had had its attention called to the matter which I was about to present to their attention, and that, I believed my conclusions as well as the observations from which they were drawn were absolutely original. This I said because I had given a very considerable time to the inquiry, whether in the discovery which I had to announce respecting the correlation of the forms and position of flowers, I had trod, unconsciously, in the footsteps of others.

The result of my research had been an utter failure to find, in text book or treatise, any reference whatever to a fact which I regarded as of high importance in the science of botany. Your article confirms me in the opinion that I had in fact not been anticipated. I would gladly send you a copy of my paper, at once, but for the fact that in a few weeks, at farthest, my observations will find their way to the public through what seems to me their proper channel. I will then send you a copy.

I cannot, without greatly exceeding the limits of a letter, present you with all my conclusions. The leading ones may, however, be summarized in two propositions :

1. A flower, completely regular, is, normally, either erect or pendulous, in position.

2. A flower, which is irregular, is, normally always lateral in position.

These propositions seem to be in harmony with the suggestions of your article. In all the instances in which they seem to be antagonized by the fact, I found but little or no difficulty in reconciling the seeming exception to the rule.

What I have meant by these two propositions would be made clearer by the citation of examples, which might be indefinitely extended. It will suffice, however, to call attention to the Ranunculaceæ alone. The flowers of Aquilegia, for instance (always regular), are in some species erect, and in others pendulous; whilst Delphinium and Aconitum (allied genera), bear their irregular blossoms invariably in a lateral position. Of course I do not ignore the fact that many flowers, with corollas nearly or quite regular, open vertically, as some species of Lilium and Amaryllis; but in these instances it will, I think, be invariably found that the stamens are declined.

I have noted, also, this suggestive fact. Where the flower is erect in its attitude, the stamens exceed the pistils, more or less in length, *e. g.*, Aquilegia chrysantha. And when the flower is pendulous, the pistils exceed the stamens in length, *e. g.*, Aquilegia Canadensis. In either case the stamens being above the pistils. So far, also, as my observation has extended, where in the Monopetalæ, the blossoms are declined or pendent, the pistils exceed the stamens in length. Of course, these peculiarities of organization mean always self-fertilization and nothing else. Cross-fertilization, in such instances, can happen only by accident. Every wind, sufficient to shake the ripened pollen from the anther-cells, causes it to fall upon the stigmas beneath.

The very interesting cases, which you cite, respecting the behavior of some Gloxinias and Gesnerias, were entirely new to me; but they tend in a remarkable degree, to confirm the truth of my two propositions. But can you tell me whether the change of form, in the flowers of Gloxinia and Gesneria, from regular to irregular, or rather from irregular to regular, is accompanied by the change in the relative length of stamens and pistils, which I have here pointed out? I think that such will prove to be the fact. [The Editor does not remember, nor has he the opportunity at hand to examine.]

At the close of my paper, I requested the co-operation of all the botanists of the society in an effort to detect and report such examples of flowers, whether of the garden or the wilds, as really or apparently, militated against the propositions presented in my paper. The result has been, I think, that all or nearly all of them are satisfied that the propositions are true. *Buffalo, N. Y., Dec. 6.*

ON RAPID CHANGES IN THE HISTORY OF SPECIES.

BY THOMAS MEEHAN.

At a recent meeting of the Academy of Natural Sciences of Philadelphia, Mr. Meehan exhibited flowers of a remarkable Halesia, and remarked on the wide divergence reached without any intervening modifications from the original, and observed that it was another illustration of what he thought must now be generally accepted, that the maxim of Ray, *natura non facit saltum*, itself needed modification. He had called attention to this particular departure among others in a paper before the "American Association for the advancement of Science" in 1874.* What he desired to do now was to emphasize a few of the points brought out prominently in that paper, that "variations in species as in morphological changes in individuals, are by no means by gradual modifications,—that suddenly formed and marked variations perpetuate themselves from seed and behave in all respects as acknowledged species, and that variations of similar character would appear at times in widely separated localities."

In addition to the illustrations given in that paper, a remarkable one was afforded by the Richardia Æthiopica, the common Calla of gardens, the present season. Some four inches below the perfect flower a mere spathe was developed, partially green, but mostly white as usual; but in this case we do not call it a spathe, but a huge bract. In other words the usually naked flower scape of the Richardia, had borne a bract. Flowers with a pair of more or less imperfect spathes were not uncommon in some seasons. The peculiarity of the present season was the interval of several inches on the stem, which justified the term of bract to the lower spathe. From the vicinity of Philadelphia, numbers had been brought to him, and others had been sent from Ohio, Indiana and Illinois,—some hundreds of miles apart. What was the peculiarity in this season over others which induced the production of this bract? was one question. Whatever it may have been it operated in bringing about a change of character without the intervention of seed, directly on the plant, and in many widely separated places at the same time. What is to prevent a law which operates exceptionally in one season operating again and in a regular and continuous way? So far as we can understand there can be no reason, and, if it should, we have a new species, not springing from seed, or one individual plant, constituting one geographical centre of creation, from which all subsequent descendants emigrated and spread themselves, but a whole brood of new individuals already widely distributed over the earth's surface, and entirely freed from the struggle for existence which the development of a species from a solitary individual pre-supposes.

Aside from the great value of this illustration of how the whole character of a species might be modified simultaneously over a wide extent of country, it afforded a lesson in environment. External circumstances may influence modification, but only in a line already prepared for modification. This must necessarily be so, or change would be but blind accident, whereas paleontology teaches us that change has always been in regular lines and in co-ordinate directions, which no accident has been able to permanently turn aside. Just as in the birth of animals we find that however powerful may be some external law of nutrition, which, acting on the primary cell of the individual, decides the sex,—yet we see that no accident has been able to disturb the proportion of the sexes born, which has always been, so far as we know, nearly equal. So in the birth of species, making all allowance for the operation of environment, the primary plan has been in no serious way disturbed. We have to grant something to environment in the production of new forms, but only as it may aid an innate power of change ready to expend itself on action as soon as the circumstances favor such development,—circumstances which, after all, have very little ability to determine what direction such change shall take.

We know that distinct forms do spring through single individuals from seed, and that after bat-

*See Proc. Am. Ass. Ad. Science, vol, 23, B. 9.

tling successfully with all the vicissitudes of its surroundings, a new form may succeed in spreading through the lapse of years or ages, over a considerable district of country. But the idea that always, and in all cases, species have originated in this manner, presents occasionally difficulties which seem insurmountable. In the case of the similarity between the flora of Japan, and that of the eastern portion of the United States, we have to assume the existence of a much closer connection between the land over what is now the Pacific Ocean, in comparatively modern times, in order to get a satisfactory idea of the departure of the species from one central spot, and to demand a great number of years for some plants to travel from one central birth place, before the land subsided, carrying back species in geological time further perhaps than mere geological facts would be willing to allow. But if we can see our way to a belief that plants may change in a wide district of country similtaneously in one direction, and that these changes once introduced be able to perpetuate themselves till a new birth time should arrive, we have a great advance towards simplifying things.

OF THE SEXES IN CHESTNUT TREES.

BY THOMAS T. NEWBY.

The past season, when my chestnut tree was in full bloom, I got branches with the early male flowers, from other bearing trees, a mile or more away, and hung them up all over my tree. There was a fine show of burrs, and I got two nice chestnuts; and I think one or two others dropped that I did not get. The rest of the burrs had no fruit in them, and mostly fell off before the time of fruit ripening. I now, however, have much doubt about the theory of the chestnut not perfecting fruit unless fertilized with pollen from another tree; though my experience so far points that way. But on the contrary, I have learned of a tree in Knightstown, Indiana, six miles from my place, which has borne fruit for several years, being an older and larger tree than mine. And there is no other chestnut tree nearer than half a mile, at least large enough to flower. One year the owner got one gallon of nuts; this year, not so many. I propose to leave mine alone next season, and note the result. *Carthage, Ind.*

[Where there are individual trees, at long distances from each other, observers have excellent opportunities of settling these disputed questions. The belief of the editor is that fertilization in the chestnut is effected by the second crop of male flowers which come out at the end of the raceme that bears the "burrs." He regards the first crop of male flowers as an utter waste, so far as any good to any chestnut tree is concerned, though of great value in the general economy of nature; and it was in objection to his view that some one raised the question that the use of the first crop of male flowers "might be" to fertilize the flowers of other trees. In other words, it was "an arrangement for cross-fertilization."—Ed. G. M.]

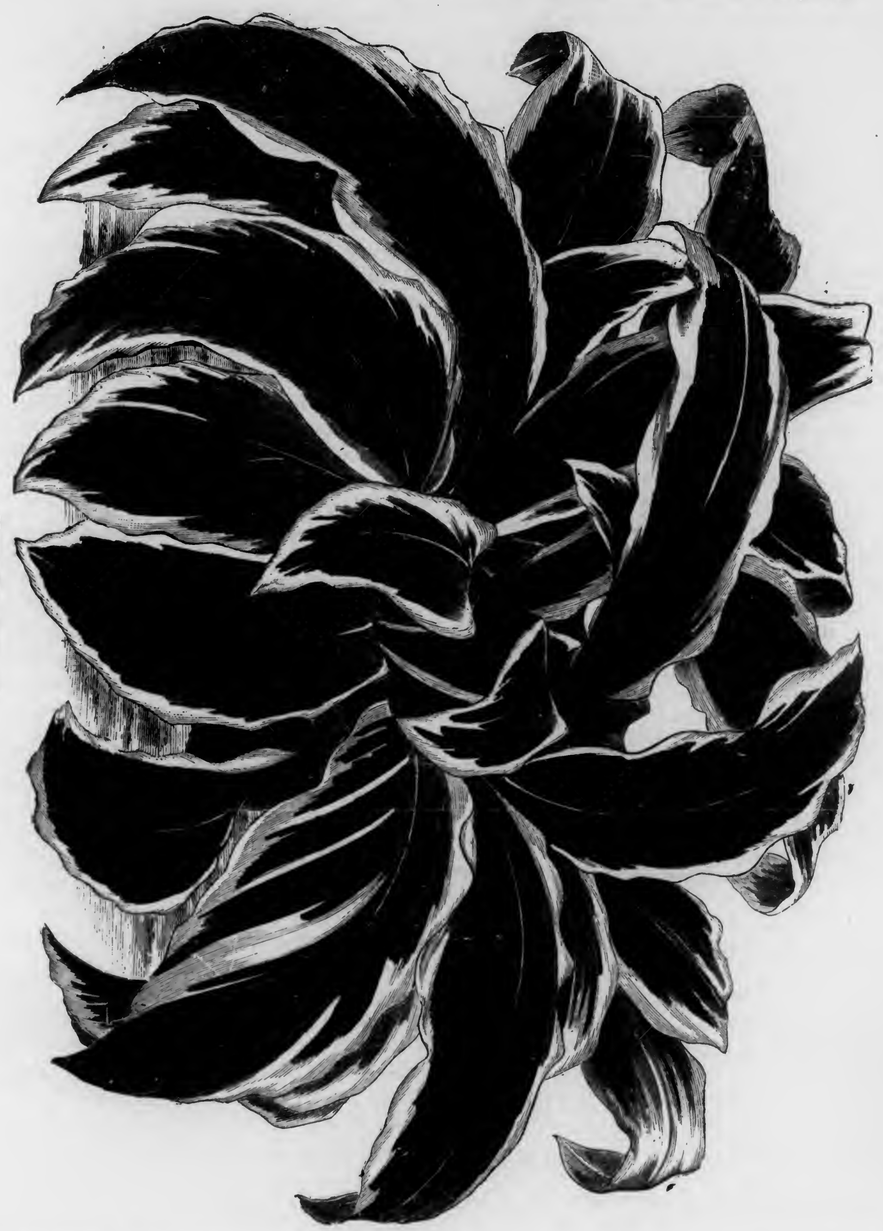
EDITORIAL NOTES.

KÆMPFERIA GILBERTII.—We have here a sketch of a pretty plant belonging to the ginger family or Zingiberaceæ, sent us by Mr. Wm. Bull. A fleshy-rooted perennial, with attractively variegated foliage, introduced from the East Indies. From the succulent roots are annually produced a tuft of oblong-lanceolate deep green leaves, which are slightly undulated at the margin, and bordered by a broad and very conspicuous band of white. The purple and white flowers are peculiar in form, as often occurs in the Zingiberaceous order.

Besides its great beauty as a plant for culture, it suggests some thoughts on the origin and nature of variegation—matters which have never been explained to our satisfaction. It has been said that the great object of color in flowers is to attract insects; but those of us who live among flowers know that insects visit flowers just as freely when there is neither color nor fragrance as when there is. The insignificant flower of Ampelopsis, without either of these attractions, is so great a favorite with bees that they almost crowd each other out to get at the sweets, while the particularly sweet flowers of the grape seem to have no more attraction than any ordinary flower. The pretty red and sweet flowers of the Rubus odoratus get a few visitors evidently for the pollen's sake, while the Black cap raspberries with hardly any perceptible smell, and greenish white flowers that scarcely look like blossoms at all, draw the whole strength of the hive to the feast spread for them.

And then we have color in leaves as well as in flowers. Color in bracts often long before the flowers are expanded, and they surely can have no special attraction for insects. The white in leaves is frequently merely the absence of green. It is really the absence of all color. In these

cases we find a marked decrease in the health and vigor of the plant. In garden shrubs this is particularly apparent. The variegated Corchorus is not half the size of the common Corchorus, nor are the flowers as large,—but very often a branch will appear wholly green, and then we have branches and flowers of the ordinary size.



Kæmpferia Gilbertii.

But when it comes to actual color, green usually prevailing, we find an increase of growth and vigor in many cases. Purple especially seems re-

markably favorable to vegetative vigor. The Purple Beech, Purple Peach, Purple Hazel and similar plants, have larger leaves and a stronger growth than their green leaved parents,—and this is true of Dracænas, and many other plants that we know as ornamental foliage plants.

Just the why of all this we don't know; yet we feel that the why is not beyond human perseverance. Every day we meet with problems like these, which if solved would be of vast practical benefit. We of the sere and yellow leaf of life,—full of zeal in behalf of problems we have already taken up, anxious that the fruit may ripen before our foliage falls,—can not undertake these things. But it may be a help to the young to point out how much there is to learn.

PODOPHYLLUM IN CHINA.—One of the most interesting facts in botanical geography is the correspondence between the flora of the Eastern United States and that of China and Japan. New illustrations of this are being continually furnished. Every one knows the "May Apple," "Mandrake," or Podophyllum of our woods. One species, P. Emodi, has been discovered in Asia, and we have the further account from a correspondent of the *Gardener's Chronicle:*

"In the higher regions of the mountains a plant of great interest is found. This is a new species of Podophyllum, a plant of the same genus as that from which podophyllin, the principle of the celebrated podophyllin pills, is obtained. The natives attach great medicinal value to the plant, and probably with more reason than the value which is often ascribed by them to innumerable plants which they so freely use for all manner of complaints. Podophyllum peltatum, the source of podophyllin, is an American plant. A few years ago, Mr. Watters, H. M. Consul at Tamsui, in Formosa, discovered one, which Dr. Hance named P. pleianthum. The Lo-fau species is the second Asiatic one. Both of them are in cultivation here, now; two plants of the latter have just flowered for the first time in our Garden, where they have been growing for about two years. The larger one of the two has leaves two feet in diameter, and it is a striking and ornamental plant."

CRACKING OF FRUITS.—One of the most valuable exercises that the devotees of gardening can indulge in, is to look closely into the causes of every occurrence within their experience. On our table some one placed a specimen of the common Cydonia, or Pyrus Japonica. A couple of weeks in a warm room caused it to shrink and become wrinkled. A week afterwards there were two cracks in it, just as in a fruit "cracked" as we often see them, when in, as we all suppose, a diseased state. Two bright youths came in and had a discussion why that pear cracked.

"Because it has shrunk," said the other.

This was disputed by the party of the first part "because the whole fruit has shrunk, and in the shrinking the fruit has split."

The answer to this was, "If the whole fruit has shrunk, how could it crack? If the fruit swelled instead of shrinking, cracking could be understood."

The reply seemed to stagger the other for a few moments, but he came again to the attack: "Because the skin has shrunk more rapidly than the pulp," and he evidently had the debate in his favor. And we may apply this to the ordinary cracking of fruits. They probably crack because the skin contracts when the pulp does not. It is not a full explanation, because we do not know why the skin contracts, but the point gained brings us nearer to the answer.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

ERICACEOUS BEAUTY AT HOME AND ABROAD.

BY WM. T. HARDING.

When, after a long voyage, the adventurous traveler, on leaving the deck of his vessel, first feels the sand under his feet, as he steps on shore in some distant land, his searching eyes will be met with many novel sights, strange to his former vision. And should he be a lover of nature, and pause to gaze at the wonderful vegetation of South Africa, in the vicinity of Table Mountain, and beyond, he will be bewildered at the sight of so much unusual beauty. And if he arrive when the many lovely species of bulbous-rooted plants are blooming, some of which kinds he may have nursed with tender care at home; or watched with curious expectation the many grotesque examples of succulent plants, which everywhere, with their odd-shaped and abnormal forms, attract his attention; especially the singular genus of mesembryanthemum, of which there are between four and five hundred species flowering around him, he will be much amazed. Nor will his surprise be less, when he beholds so many kinds of pelargoniums, some of which sorts he remembers as having seen long ago. And how plain before the mind's eye will appear the unforgotten greenhouse at home, where, when a boy, he first beheld these odorous and pretty favorites of the olden time. And among these, upwards of two hundred dissimilar species, many of which, both foliage and flowers, are fragrant; with curiously blotched and beautifully pencilled petals, in every shade of coloring, from pure white, to brilliant scarlet, and crimson; he will find much to admire.

Of what Diaz, the Portuguese navigator, thought of "The Dark Continent," when first he landed there, differing so much as it does from the physical configuration of his native land, history remains silent. Yet, we can hardly suppose that at the sight of the fine, portly green trees, handsome shrubs, and pretty flowers, he could remain indifferent, after being so long tempest-tossed, about what he aptly termed the "Cape of Storms." But dismissing for the present the notice of many interesting plants which flourish there, I will endeavor to confine my remarks to the genus Erica, and of that particular section known as Cape Heaths.

On leaving the quaint looking old city and environs of Cape Town, formerly settled by the Dutch in 1652, the enthusiastic traveler soon begins to meet here and there, a variety of the small, handsome evergreen Ericas, as a foretaste of what is in reserve for him, as he journeys upwards and onwards. And presuming he is one of those inquisitive persons, who let nothing escape their keen observation, his progress will be slow indeed. On all sides, and especially while passing over the long stretches of undulating country, his attention will continually be drawn towards the increasing numbers, in many varieties, of these elegant miniature flowering shrubs. And, if he fortunately knows their botanical names, he will be much pleased with the winsome features he joyfully recognizes, like the meeting of old companions after many years. And numbers of free growing kinds, such as Erica cerinthoides major, from three to five feet high; E. dichromata, from four to six feet; E. vernalis, six to seven feet; E. Massoniana, eight or nine feet, and E. euriolaris, twelve to fifteen feet; he will occasionally meet, overtopping those of a more dwarfed and compact habit; such as E. comosa, E. nigrita, E. blanda, E. petiolata, E. minima, E. elegans, and E. carnea. To specify individual kinds by name, from upwards of five hundred indigenous varieties, would give the reader but a faint idea of what they are like, unless well versed in botanical nomenclature. And as he approaches the rising ground, along the well beaten path which winds up the mountain sides, further on, these ligneous gems assume a more symmetrical and sturdy habit, and if possible, become more beautiful, until the summit of Table Mountain is reached.

After hard and persistent struggling up and along the tortuous and rugged footpath, which frequently doubles and zigzags among immense masses of detached rocks; through deep defiles and apparently impassable chasms, along which the purest spring water comes splashing over precipitous cascades, from near the apex, the tired pedestrian will find an inviting resting place in a natural alcove. To his great surprise, he will then see what may seem incredible to old heath growers, who have only seen them in pots under glass; namely, low bushes of E. vestita elegans, and E. princeps, flourishing with all the freedom of bog plants, in soil apparently never dry. While, *per contra*, E. pumila, E. densiflora, E. incana, and E. penicillata, seemed equally healthy, growing in small cracks or crevices, in the fissured rocks, where it was high and dry, with only a few grains of sand to root in.

The writer was completely nonplussed at the sight of healthy blooming heaths, growing upon the face of precipitous rocks, upon the sunny sides of which, it was unpleasantly hot to the touch; conditions, fatal to them under cultivation. It is well understood by those who are versed in vegetable physiology, that climatic and atmospheric influences are powerful factors conducive to the health and vigor of plant life. And thus, much which is apt to perplex us, from seeming so ultra-abnormal, at first sight, may often be accounted for; especially when we consider the external circumstances, which make so much difference to the welfare of indigenous plants, in their native habitats, to those unacclimated, from other lands.

Returning again to the subject, and following the ascending path, which to his intense delight, will be found closely margined on each side with handsome heaths; which absolutely cover every inch of soil possible to root in, with masses of highly prized species, the sight cannot fail to remind him of those he may have often admired at home. True, there are no legends of the past wound around them, as there are about the heath, or heather of other lands; of which, the poet has often sung. Savage Hottentots and Caffres, who for ages have ignorantly wandered among them, keep no historical records; and although no charm of romance invests them with anything prosy or poetical, they are, nevertheless, most intensely interesting to those who admire frutescent beauty. And whoever has enjoyed a ramble among them will not be likely to ever forget the peculiar, refreshing odor, arising from the myriads of pretty blossoms.

And while still ascending, at every onward step brilliant colors and fresh forms of heath beauty will delight the eye with pleasant changes, until, when near the summit, the novel sensation of passing above the fleecy clouds, which eternally drape the top of Table Mountain, will be experienced. Even when in cloudland, the somewhat stunted, though symmetrical, heaths will still be there. And with every possible tinge, or shade of green tiny leafage, these compact little plants seem to vie with each other, for the palm of grace and beauty. All of this large and interesting family are exquisitely bedecked with a profusion of delicate, lovely, wax-like flowers, from pure white, to flesh and cream color; yellow, dark green, light green, orange, and purple; red, pale red, red and green, red and yellow, red and orange, orange and purple, white and scarlet, to brilliant scarlet, crimson, flame color, etc.

Preferring to give form and color of flower, to mere technical terms, which I trust will give the reader a better idea of what they are like, I will as concisely as possible say, the styles or shapes of flowers, are tubular, or cylindrical, with some kinds long, while others again are short. Some species have inflated flowers, of fair size, while another division has small globed-shaped ones. Narrow necked, with wide spreading borders, form another type. Small oval shaped kinds, constitute another group; which is followed by one which has lovely flowers enclosed in inflated calixes; while another section has curious, though extremely pretty double flowers.

While "up above the world so high," the admirer of nature will get extensive views of land and sea. The magnificent panorama spread before him, will be scanned with intense interest, combining as it does, a matchless landscape, emerging into a marine picture, which fades in the dim distance of the deep blue sea.

> "In prospects thus, some objects please our eyes,
> The shapeless rock or hanging precipice,
> Which out of nature's common order rise."

As this imperfect notice is getting longer than I intended, I will meet the lover of floriculture nearer home. With every opportunity of seeing heaths, or ericas, both in a wild or cultivated state, I unhesitatingly pronounce them to be as interesting and beautiful plants as ever graced a greenhouse. And my long cherished hope of seeing them cultivated in this country, I trust will yet be realized.

Although the climate may be fickle and uncertain, yet, there is among the profession of horticulture, if properly qualified men are employed, and the opportunity given to exercise it, sufficient skill to grow and flower these matchless strangers, on this side the sea. In other words, no mere pretender must meddle with them, or disappointment will as certainly follow, as light comes with day. Of all plants with which I am acquainted, I know of none which require more practical skill in their management, than Cape Heaths. Presuming the above remarks may create a desire to possess a collection of these elegant plants, it is possible the reader may feel disappointed with the silence of the writer, for not fully stating how success may be achieved by those who are willing to try. But it would be a futile task, to attempt to convey the requisite knowledge, which can only be acquired by actual experience. Instead, I advise employing a competent man.

Of Ericas, a noted grower says: "No ligneous shrubs are better deserving of cultivation than the heaths. For of what other genus can it be said that every species, without exception, is beautiful throughout the year, and at every period of its growth; in flower or out of flower, and of every size and age; perpetually green, and perpetually in flower, and these flowers of various colors and sizes, and of many shapes?" Another, equally wise on the subject, says: "The two splendid natural orders, Ericaceæ, and Epacridaceæ, (of which I made mention in a recent number of the MONTHLY,) perhaps contain a greater number of really beautiful plants, than are to be found in all the other orders put together." All of which your correspondent fully endorses. Supposing some of the readers desire to grow heaths,—are of such a nature that they must have some,—I will give a list of a few beautiful kinds, which with ordinary care, they may manage to grow—namely: Erica Caffra alba, E. Caffra rubra, E. rubida, E. Wilmoreana, E. umbellata, E. sicula, E. arborea squarosa, E. Bowieana, E. mutabilis, E. cruenta superba, E. intermedia, and E. colorans. *Mount Holly, N. J.*

THE LOTUS OF THE ANCIENTS.

BY DR. W. R. GERARD.

"Inquirer" (p. 350 of GARDENERS' MONTHLY), probably wants information in regard to the famed Lotus, the food of the Lotophagi, which Homer says was so delicious as to make those who ate it forget their native country.

> "They went, and found an hospitable race;
> Not prone to ill, not strange to foreign guest:
> They eat, they drink, and Nature gives the feast;
> The trees around them all their food produce,
> Lotus the name—divine, nectareous juice!
> (Thence called Lotophagi) which whoso tastes,
> Insatiate riots in the sweet repasts;
> Nor other home, nor other care intends,
> But quits his house, his country, and his friends."
> —Odyssey, 9; Pope's translation.

This enchanting fruit of the ancients is said to have been the product of an African species of Zizyphus—Z. Lotus, Willd. Celtis Australis has also had the credit of being the plant that yielded the fruit under consideration; hence its popular name Lote-tree. The Greek name λωτός (lotós), included the above-named shrub, a species of melilotus, a few trees, and several aquatic plants.

New York City, Nov. 18, 1884.

RECOLLECTIONS OF BY-GONE SCENES.

BY JAMES MORTON.

In reading the interesting article of Wm. T. Harding in the November MONTHLY, and following him in vivid imagination in his rambles through Needwood forest, I cannot but share with him in surprise and regret at the breaking up of the bright and fertile retreat of Rangemore. (See correction of this.—Ed. G. M.)

I have read with avidity and delight the pleasing word pictures of Mr. Harding in many of his flowery descriptions of things and places in the English midlands; but when he touches on Rangemore I can no longer refrain from joining with him in a few less elegant words than his on the beauties of these Elysian glades. My words may not be of a general interest to the readers of this journal, but it certainly gives me relief to vent my feelings and say a few things in favor of the abodes surrounding Burton and along the banks of the winding Trent. I was an admirer of things at Rangemore; its undulating vegetable garden, fruit trees, lawns, its fine growing graperies, and unique collection of plants I have frequently trudged about seven miles to see. The scenes that Mr. Harding describes are all familiar to me, and their recollections beget pleasant memories of "by-gone happy days." In this metaphorical ramble we cannot but visit Rolleston Hall, the seat of Sir Tonman Mosely, replete with all to be found in horticultural interest, and smiling under the charge of the genial Mr. Buck. What fine specimens of Cyathea dealbata and Dicksonia antarctica flourished in the conservatory there. I have tramped it every inch from Rolleston to Dunstall, and retain pleasing thoughts of Mr. Simpson and his indefatigable foreman, Mr. Bradbury, the ridge and furrow roofed conservatory, with many things of interest that escape my memory now. Crossing the Trent at Barton and Walton into the sun-blessed radiance of the Derbyshire hills, and soon to the sylvan shades of the towering elms in Drakelowe Park, where I have sauntered through its leafy bowers, and took the divergent leafy pathways of the fallow-deer. The gardens at Drakelowe contain many admirable things in the plant and fruit line, especially so since the acquisition of the Coton Hall plants, by Mr. John Gretton. Mr. Arnold was then in charge and the stately mansion of Drakelowe nestled in bright tranquility on the verge of the rippling Trent. Bladon House, still higher up on the Derbyshire slope, the residence of Fred. Gretton, Esq., is where for some years I whiled my time away. Our "bothy" was close to the river and often when "on duty" I stole to bathe in that beer making stream. Mr. Prince, a graduate of Chatsworth, was gardener at Bladon at that time; under his tuition I gained much information that has since proved valuable to me, not all in matters horticultural—for his life was a model for gardeners to emulate. There I saw the finest lot of fancy Pelargoniums it was ever my privilege to behold. Staged at the June show of Burton-on-Trent, they were as sure of the awards as were the orchids from Rangemore or the pines from Rolleston. Mr. Prince was the instigator of many improvements in the gardens at Bladon House, and under his guidance they lacked none of the thrift to be found in their rivals beyond the Trent, or in that salubrious location where the morning breeze is mingled with the vapors of distilling malt, and the cold air of Winter mellowed with the perfume of the hops.

I would like to take your interesting correspondent by the hand and travel again those verdant

glades, whether through the intricate hedgerows of Elvaston, the model village of Endsor, or the Derby Arboretum; providing it was anniversary day, when the green sward is studded with the grave and gay from all surroundings to take part in the hilarity of the occasion. Sherwood forest also abounds with places of much interest. Along the line of the Nottingham and Mansfield railroad, the neat and interesting gardening spots of Beeston, Papplewick, and Annesley loom up serenely from the romantic grounds of "Bold Robin Hood and his merry men." At Annesley Hall I first became acquainted with "bothy" life and partook of its pleasures and adversities as the varying circumstances would permit. There beside that vine covered mansion, the ancestral home of the Musters family, lies the green sward on which the immortal Byron was wont to play. An old doorway that stands beneath an ivy clad terrace that leads to a cavern underneath is closely perforated with bullet holes, shot by the hands of the poet. A solid oaken door was made by Mr. Young, the gardener there, and the older one that served as a target for author of "Don Juan" was carefully bolted on as a means of preserving so interestiug a relic. It was there beneath the shady elms, in the calm seclusion of that picturesque habitation, the poet wooed Mary Chaworth Musters, and Annesley then had untold charms for him. Sharing, however, in the changeful nature of less prominent mortals, after the marriage of Mary whom he wooed so vainly, he wrote:

"Hills of Annesley, bleak and barren,
Where my thoughtless childhood strayed,
How the northern tempests warring,
Howl above thy tufted shade!

"Now no more the hours beguiling,
Former favorite haunts I see,
Now no more my Mary smiling,
Make ye seem a heaven to me."

The neighborhood around there is rich in historic and classic interest. Newstead Abbey, where the poet lived, lies in close propinquity; of which he writes:

"Through thy battlements, Newstead, the hollow winds whistle,
Thou, the halls of my fathers, are gone to decay.
In thy once smiling garden, the hemlock and thistle,
Have choked up the rose which late bloomed in the way."

A few miles south of there, in the Hucknal Forkard churchyard, the poet's remains lie beneath a monument that bears the inscription of "Byron" in that enclosure of the dead.

It would be difficult to find anywhere a district in which so much enthusiasm is manifested in horticultural pursuits by amateurs as in that region. Every man is a florist no matter whether he works in the coal pit or at the stocking-frame. Roses, pansies, dahlias, and hollyhocks they grow with much success. With what pride they cherish a few pansy seeds or a dahlia cutting, if told it surpassed anything their neighbors had got, and would bring them to perfection with wonderful precision for most of the surrounding shows. I have known men that worked in the coal mine all day to spend their mornings and evenings in attending to their particular "hobby" of gardening. In such work they live and die and find pleasure in each recurring season. The mining districts may suggest the idea of uncouth scenes to many, but there are bright and happy homesteads that are attended to by the miners with such jealous care as to make them sweet with the perfume of lilies, and gay with the sheen of the rose. *Torrington, Conn.*

EDITORIAL NOTES.

The Old Botanic Garden of Bartram.—About fifty of the descendants of John Bartram, the botanist, assembled in the ancient Friends' meeting-house in Darby recently, for the purpose of arranging a family organization. The extreme inclemency of the weather prevented a larger attendance. Amos King, of Moorestown, N. J., presided, and William D. Kelley, Jr., acted as secretary. Mr. King stated to the meeting what it is desired to accomplish. It is first proposed to establish communication with all branches of the Bartram family in various portions of the United States. This being accomplished, the next move will be to purchase, if possible, John Bartram's homestead and gardens in West Philadelphia. A grand family reunion and Bartram Centennial will then be held.

A few years ago some liberal gentlemen made an offer to the estate owning the Gardens to buy and present to the city, but the owners refused to sell for this purpose; believing they could make more by destroying its botanical associations, and turning the whole into building lots. There was no ground for such belief, as the citizens were willing to give the full value of the ground. Since then, Councilman Meehan's ordinance, passed by the city last year under an act of the Assembly, gives the city a right to take ground that may be desired for public squares, and the value thereof to be paid after assessment by a jury of award. If therefore the Bartram heirs, or other Philadelphians interested in preserving this wonderful memento of a grand old botanist, can collect a sufficient fund, the heirs would in all probability

see better now than they did on the former occasion, that it would be to their best interests to sell at their own figures, than to trust to the uncertainty of a jury of award.

The Quassia Tree.—Dr. Baillon has just presented the Horticultural Society of Paris with a specimen of Quassia excelsa, a very rare tree, and at present, perhaps, the only one in Europe. The history of this solitary individual is curious; it was reared from seed in 1868 by the late Dr. Barillet-Deschamps, who gave it to the garden of the Faculty of Medicine; and it is highly probable that the seeds came from Martinique under the name of Bittera febrifuga. Hence it was not easy to determine the real nature of the young plant, its only characteristic being the extreme bitterness of all its parts, the leaves especially. As it was supposed to require great warmth, it was kept in a hot-house, where it got on very poorly, until a Prussian shell fell into the place (January 20th, 1871). The following night being excessively cold (it may be remembered that the winter of that year was one of the severest on record), all the plants cultivated there perished except this. Its terminal bud having been lopped off by one of the splinters of the projectile, it was picked up and examined, when it was found to contain a flower presenting all the characteristics of the family of Rutaceæ. The plant was now transferred to an Orangery, where it recovered and throve well; it put forth a quantity of leaves in the following spring, and since then it has been growing and producing female flowers every year, so that, to propagate it, a male specimen has to be found. It is a common tree in Jamaica, where it attains a height of 60 feet, and goes there by the name of "Bitter Ash." It is exported in logs known in trade as "yellow quassia;" they are made into goblets on the turning-lathe, and these are sold under the well-known name of "bitter cup." The shavings are also much in demand for infusions exceedingly beneficial to weak stomachs. They are used in the manufacture of beer; and, as for the wood itself, it is also made into boxes for preserving furs from moths, which shun such receptacles on account of their bitterness.—*The Garden.*

Mortgages on Farmlands.—A Georgia paper thus describes the peculiar operations of a mortgage company: "The Freehold Land and Mortgage Company, of London, sues Walter A. Baseley, Jr., of Greene Co., for $2700. This indebtedness was created in June, 1882, at which time the defendant borrowed $2500 and gave his notes for the principal and interest. This money was payable at the Corbin Bank of New York, and by the terms of the agreement the notes were to be declared due at the pleasure of the holder in case the interest was not paid within thirty days after it was due. The notes have interest coupons attached, like the coupons on bonds. It seems that in this particular case the $200 of interest became due November 15, 1883, and was not paid. The debt to the company is secured by a mortgage on 520 acres of land in Greene county. As the company is a foreign corporation, it has the privilege of bringing the suit in the United States courts, which it has done. The above suits make the beginning of an era of untold misery for the people of the State. About three years ago these companies set up business in Georgia, advertising most extravagant inducements to make farmers borrow money. Thus, on $3000 worth of property perhaps $1000 could be borrowed. From this $1000 would be deducted $200 by the agents for commissions, etc., and upon the nominal $1000 8 per cent interest had to be paid, and the money had to bring in five years' interest, no matter whether the borrower wanted it that long or not. The real interest paid is 14 per cent. Having got the money and lost it, the borrowers now find themselves in the hands of sharks, who will mercilessly push them to the wall in the Federal courts, to attend which many of the victims will have to travel 100 miles. Thus within another few years there will be witnessed a wholesale eviction of farmers, with scenes rivalling some of the stories coming from Ireland."

A Native of North America.—This is the description of Helenium pumilum in an excellent English serial. This is about on a par with saying that a fern which is found growing only by Lake of Killarney, is "a native of the Northern part of the Eastern Hemisphere." We often wonder at the limited notions of North America which prevail in otherwise intelligent English circles.

Why Magazines Live or Die.—The *Boston Herald* has an article on the death of *The Continent*. The why and the wherefore puzzles it and other people. Its editor thought its struggle was because it was published in Philadelphia, and so the publication office was moved to New York; but even this salt did not save it. To us the life or death of a magazine is a simple problem. If you offer people what they want, and what they can get in no other way so well, the magazine will

be a success; if not, it will die, and it should do so.

THE FOX GRAPE.—A foxy grape in the old world, is one which has a brown instead of a black color as it should have—in short, a black grape hardly colored. It is more than probable, that the term "fox grape" was given to the American grape of that name, from its "foxy" color. Now we speak of the "foxy odor" of a fox grape, as if the fox had anything of a smell like that. The fox has no such smell. And then we have a "foxy taste." It is interesting to note how words are led to have meanings quite different from original intent.

GARDENING FOR WOMEN.—Miss Gertrude Sackett, in an admirable address before the Summit County Horticultural Society, at its recent meeting at Springfield, Ohio, remarked: "One thing should here be spoken of—a woman may be a good dressmaker, but not all are. I think the old saying, 'Whatever is worth doing, is worth doing well,' finds illustration here. A dressmaker in order to be successful must learn the trade. The average American woman has a good figure, when it is not distorted by a wretchedly fitting dress.

"To take a different view of the subject, let us mention a few ways in which women may earn money, if that is what they are seeking.

"Gardening may be carried on to a limited extent, and the cultivation of flowers may be made a specialty. Lima beans are quite easily raised, and sell for a good price in the fall. Sweet corn may likewise be raised with some profit, even if some of the gain is lost in defraying the expense of hiring the harder part of the labor. Gardening, too, has the great advantage of being a decidedly healthy occupation.

"A few years ago, a young girl who, from all appearances, was fatally ill with consumption, went to a country home and amused herself in the garden when she felt strong enough. She found the health-giving properties of the soil and recovered. She declared that the spade was her doctor."

VICIA DENNIESIANA.—In the herbaceous department at Kew this strange and curious plant is now in flower. It was received at Kew from the garden of the late H. C. Watson, Esq., of Thames Ditton. That gentleman described the plant and gave its history in Godman's Natural History of the Azores, published thirteen years ago, and from that work the following particulars are abstracted: —"This is a remarkable plant in itself, and in its history as far as hitherto known; for chance only appears to have saved it from becoming an extinct species almost immediately after it became known at all. It was found by Mr. Hunt on the mountains at the east end of the island (San Miguel), growing on damp earthy precipices; but in one spot only, from which it has since disappeared through a landslip. Mr. Hunt unsuccessfully sought for the plant elsewhere in the same neighborhood, and no other collector found it in any of the isles. In general appearance its nearest analogue is V. villosa, although at first glance it is distinct from that and every other Vicia known to me." The changes in the color of the flowers are remarkable. In the early bud they are of a fine purple; and being one inch long, and numerous in the racemes, they lead to the expectation of a handsome appearance. But as they expand, or even earlier, the color changes to a dull slate, and finally to a dingy fawn. In order to prevent V. Denniesiana from being lost, it is better and safer to winter a plant in a cold frame and plant out in May; of course seeds, when ripened, afford a ready means of increasing so rare and curious a species.—*Gardener's Chronicle.*

MR. JOHN GARDNER.—This well known horticulturist, gardener and general estate manager to Pierre Lorillard, met with a severe gunning accident recently at the hands of a friend, who did not know he was near. One shot went through the nose, and another destroyed the left eye.

ELBERT S. CARMAN, the very successful editor of the *Rural New-Yorker*, we learn from the *Farm Journal*, was born in Hempstead, Long Island, in 1837, and educated partly in Brown University. He became editor and proprietor of the paper in 1877. He has always had a fondness for agriculture and botany, and his experimental grounds at Rockaway furnish many of the facts which render his paper so popular.

HISTORY OF THE PINEAPPLE.— For this, the material is not abundant, or, I should rather say, good material. For the most voluminous writers upon this subject have evidently regarded their imagination as a fountain of facts. There are however, a few well authenticated facts in regard to its history:

First, Columbus found it growing wild on the Island of Guadaloupe in 1493.

Second, Baron Von Humboldt found it in the valley of the Orinoco, and elsewhere, in the uninhabited wilds of South America.

Third, At an early period it was found naturalized in Africa, Asia and the East Indies. This has led some to question its American origin. But the first fact named settles that beyond dispute, for whatever may be said of the passage of the ancestors of our aboriginal tribes across Behring Straits, or the Icelandic discoveries upon northeastern borders, it is very certain that no voyager from any country where the pineapple could be grown, ever set foot upon the shores of either the American Continent or Islands previous to the days of Columbus. It is equally certain that it has been widely distributed by the hand of man, and that, too, at an early period. It is said to have been found naturalized in Java as early as 1599.

It was carried to Europe soon after its discovery in America by Columbus, and thence to regions beyond. But it is probable that it was carried to China from Peru by way of the Pacific, and thence distributed to surrounding regions. It is also probable that India derived its first supply from the European stock through Portuguese soon after its introduction into Europe, and thence extended to adjacent countries. Wherever introduced, it at once was conceded a high rank among the fruits of earth, because of its large size, its delightful aroma, and the abundance of its juice of a most exquisite flavor.—*Rev. Jas. H. White, in Florida Dispatch.*

TRANSACTIONS OF THE ILLINOIS HORTICULTURAL SOCIETY, 1883.—A. C. Hammond, Warsaw, Secretary.

TRANSACTIONS OF THE MISSISSIPPI VALLEY HORTICULTURAL SOCIETY, 1884.—From W. H. Ragan, Greencastle, Indiana, Secretary.

ONTARIO SCHOOL OF AGRICULTURE, NINTH ANNUAL REPORT, 1883.—From James Mills, President of Ontario Agricultural College.

What a grand work for the horticulture and natural history of our country, some one might do who would undertake to make a general index of all the good things that have appeared during the past quarter of a century in works like these,—no individual could afford to do it, but some society possessing complete sets, and having the means at command, could not put the money to better uses. One of the best pieces of work General Le Duc did when Commissioner of Agriculture was to make an index of all the volumes of that department up to his time. Would it be out of order for the same department to make an index of all State reports? What a very useful work it would be! These before us contain very valuable essays; but just when one wants to refer to them he will forget where to look. A few days ago we wanted to look over all that had been written on actual experiments or observations on the intercrossing of Indian corn, and after an hour's search found nothing, yet surely there must be much on record somewhere.

ORCHIDS, THE ROYAL FAMILY OF PLANTS.—By Harriet Stewart Miner. Boston: Published by Lee and Sheppard, and in New York, by Charles T. Dillingham. Price, $15.00.

The most magnificent work of its class ever issued in our country, and will do more perhaps than any thing that has appeared to make orchid culture widely popular. There are seven great families of orchideæ, and in the twenty-four plates given selections are made from all these, and thus is given a general idea of all the family. The species illustrated are, Dendrobium Devonianum, D. Ainsworthia, D. nobile, Masdevallia Veitchii, Cattleya Trianæ, C. Chocœnsis, C. Mossæ, C. Loddigesii, Lælia autumnalis, L. Dayeana, Phalænopsis Stuartiana, Oncidium Barkeri, Calanthe Veitchii, Aerides quinquevulnerum, Odontoglossum Roezlii album, O. triumphans, O. Alexandræ, Lycaste aromatica, Vanda suavis, Cymbidium Hookerianum, C. niveum, C. Haynaldium, and C. Spicerianum. The colored lithographic plates are all drawn by the authoress and are given here in quarto size. The lithography is very well done. Practical facts, philosophical speculations, classical allusions, poetical references, and various thoughts suggested by the subjects form the text, which is beautifully printed on heavily calendered, gilt edged paper. Possibly critics in the various departments of literature might want to qualify or add to what has been said by the authoress, but all will say that her attempt to offer a very beautiful and interesting work has been a signal success.

For weddings or birthday presents, Easter gifts or memorial gifts of any kind, nothing we are sure would be more appreciated than a copy of this book; while those who have a collection of orchids, or desire to have one, will surely want this beautiful book in their libraries.

HOW THE FARM PAYS.—By William Crozier and Peter Henderson. New York: Peter Henderson & Co.

This is a large octavo of 379 pages, handsomely printed and profusely illustrated, giving the experience of two of the most successful men in market gardening and farming our country has produced. What two such men have to say about profitable work of this kind must of necessity have great weight. Mr. Henderson's works of a

similar character have had an immense sale, and hundreds have derived profit from them. It will be no less the case with this. A capital thing, not often done as well, is the Index.

ORNAMENTAL GARDENING FOR AMERICANS.—By Elias A. Long. Orange Judd Co., New York.

No work issued for many years in our country has come before us that we can more cordially welcome than this. Books on fruits, flowers, and vegetables, are common enough; but on ornamental gardening generally, we have had nothing that was worthy of intelligent attention and at the same time just suited to the wants of every-day life. Scott's "Suburban Home Grounds" is a magnificent work. To our mind, not even Europe with all its wealth of garden taste and wealth of means, has issued its superior; but it is a work suited to the best specimens of gardening—to the wants of those already somewhat advanced in rural taste; or to the desires of those who want to make perfection in the art a special study. No good garden library is perfect without a copy of "Scott's Suburban Home Grounds." But there are thousands in our country who know but little of ornamental gardening, who desire to know more, and who have to be taught gardening almost as we teach the alphabet to children. There have been attempts of this kind before, but their misfortunes were, they as a general rule mistook a want of knowledge for stupidity, and they left the reader with little desire to know more than what they taught. This is not one of that class. Assuming the reader to know little, he is not burdened, but led on intelligently, till by the time he is through, he will be an accomplished landscape gardener. We really think that every home in the country will profit by having this book in the library; and gardeners especially should get and study it. A general diffusion of this book among those who "lay out places," and do garden work, would be a great blessing to gardening in America.

THE AMERICAN GARDEN.—Messrs. B. K. Bliss & Sons have disposed of their interest in the *American Garden* to E. H. Libby, who will continue its publication. The magazine has been ably edited by Dr. Hexamer, who we are glad to note will continue in charge. It has been a valuable coadjutor in the cause of horticultural progress, and we wish it a long-continued success.

THE CATERER.—E. C. Whitton, Phila. It is no use to raise nice fruits or vegetables unless some one knows how to cook them well. This is an excellent monthly magazine devoted to the kitchen.

SCRAPS AND QUERIES.

PRONUNCIATION OF VERONICA. — "Kate R." writes: "You did not tell us which of the two forms of pronunciation of Veronica we should use, presuming there is but one correct way."

[Our original correspondent who inquired about Veronica has raised a storm around us—and yet it shows how large is the number of people who take an interest in the intellectual matters incidental to horticulture. It so happens that for a hundred years or more the same question has been asked that "Kate" asks now. We can only say that the correct pronunciation will depend on the question of derivation. Those who believe that the name is in any way connected with the legend of the handkerchief will say Ve-ron-i'-ca; those who regard it as derived from Betonica will say Ve-ron'-i-ca. Horticulturists and botanists always use the latter pronunciation, and we note that Professor Gray, in his "Manual of Botany," adopts this pronunciation, though evidently leaning, as Dr. Darlington did, to the ecclesiastical theory of the name.

To our mind the fact that this plant has been named, and the pronunciation the same as Betonica, in all probability ages before the legend of the handkerchief became connected with it, is an additional reason for the origin of the name as we have suggested—merely a corruption of Betonica, a family with which it was originally classed.—Ed. G. M.]

GEORGE STERLING.—"The subject of this notice died in Edinburgh, Scotland, on the 29th of last May, aged seventy-nine years. His name as a gardener, and particularly as a botanist, was known throughout Britain. Uneducated and self-taught botanist that he was, few men surpassed him as an authority on the general nomenclature of plants. The writer of this was an apprentice under him while gardener at Melville Castle, near Edinburgh, in 1842, and at that time the collection of hardy herbaceous plants under the charge of Mr. Sterling numbered over fifteen thousand species, and the collection of Cape Heaths and New Holland plants was probably unsurpassed by any private collection in the vicinity. George Sterling was a stern disciplinarian though one of the kindest of men, and the position of his workmen and apprentices was no sinecure. Nearly every plant of his large collection was distinctly labeled, and all too by his apprentices and workmen at night on their own time, often burning the midnight oil, for our own benefit, he said. A list was given to each man weekly and a set task exacted from each.

"At that time, for a man in his station, Mr. Sterling received flattery enough to turn his head. Rarely a week passed but his interesting collection of plants was examined by amateur and professional botanists, and such men as Dr. Niel of Edinburgh, McNab of the Botanic Gardens, Edinburgh, and Turnbull of Glasgow consulted and deferred to his opinion. Mr. Sterling was a candidate for Curator of the Cambridge Botanic Gardens, England, in 1864, and received scores of testimonials from the highest sources in Britain vouching for his peculiar ability for the position.

"The writer visited him in Edinburgh in 1872. He had then retired from active work, and though sixty-five years of age was as bright mentally and physically as a man of fifty. He still kept a collection of over six thousand species of plants, mostly Alpines, and amused himself by making exchanges with the different Botanical Gardens throughout Europe.

"Mr. Sterling had but one son, who I understand has inherited the botanical tastes of his father and who has been for some time in the United States, and is now of the firm of Gould & Sterling, nurserymen, Jacksonville, Fla. P. H."

DISEASES OF PLANTS. — A. W. Smith says: "The diseases of plants we plant growers have to contend with would be an interesting subject of value to the general reader of the GARDENERS' MONTHLY."

[As our correspondent well says, this is one of the most interesting subjects that can employ the thoughts of the practical man, and we are much obliged to him for the suggestion. It will be a great pleasure to us to receive from correspondents accounts of their troubles and trials, and experiments and observations, that will enable the Editor to aid and assist them. In a magazine of this kind the Editor has to fall in with the wants and wishes of his subscribers. To-day it may be in the line of the practical value of steam over hot water; to-morrow the thoughts of the mass of readers may turn in the direction of the greatest amount of money to be had from an orchard that is in grass, or in an orchard kept in a clear surface. At one time the great mass of the readers seem to run into a desire to discuss facts and problems in natural history that may have a relation to gardening—and then again the Editor is overwhelmed with correspondence about the enormous value of the wine crop to the people of the United States, and the necessity of publishing everything possible that may tend to keep down the ravages of the Phylloxera. In short, the GARDENERS' MONTHLY has to take those subjects into the most earnest consideration in which the correspondents themselves seem to take the greatest interest. In this case we second the suggestion of our correspondent that the diseases of plants is one of great practical importance; and it will be a pleasure to the Editor to aid any correspondent during the coming season who may desire information.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

HAARLEM EXHIBITION OF FLOWERING BULBS, MARCH, 1885.

BY J. H. KRELAGE.

In 1885 the General Society for improving Horticulture at Haarlem will celebrate the fourth century of its existence, and on that occasion an exhibition will be opened at Haarlem on a large scale, being one of the quinquennial shows of the society. Such grand exhibitions have already been held in 1875 and 1880. The one now announced, however, will surpass all those held before, and if it become what it promises, it may be the best show of flowering bulbs and tuberous rooted plants ever held. The show will be opened from 20–24 March in the largest hall at Haarlem with its annexes.

The schedule of prizes has 140 entries for which 381 medals are offered, (golden, gilt, silver and bronze—some of them, with a surplus of money

value.) The value of all the prizes together is more than £500, Sterling. There are 87 medals for Hyacinths, 60 for Tulips, 17 for Narcissus, and smaller numbers for Crocus, Fritillaria, Galanthus, Leucojum, Scilla, Chionodoxa, Muscari, Erythronium, Anemones, Ranunculas, Lilium, Gladiolus, Iris, Helleborus, Hepatica, Trillium, Convallaria, Hotea, Spirea, Dicentra, Terrestrial Orchids, Pæonia, Amaryllis, Imanthophyllum, Eucharis, Orchids, Gesneriaceæ, Begonia, Anthurium, Caladium, Calla, Cyclamen, Tropæolum, Lachenalia, Sparaxis, Phormium and Yucca, as well as for miscellaneous, rare or new bulbous and tuberous-rooted plants.

A large number of medals are besides offered for table decorations, bouquets, arrangements of flowers, baskets, etc., with flowers or plants with this peculiar condition, that all the flowers, which are put in these arrangements ought to be those of bulbous or tuberous-rooted plants.

This show will doubtless be a great attraction to all those who take an interest in bulb-growing. It will give a better idea of the collection of spring bulbs grown in the neighborhood of Haarlem than any show did before, and will be well worth coming over for a few days to Holland to see.

EDITORIAL NOTES.

AMERICAN POMOLOGICAL SOCIETY.—Preparations are being made by the Michigan Pomologists to make the next meeting of this society, which is to be held in their State, one of the most successful on record.

THE PENNSYLVANIA STATE HORTICULTURAL SOCIETY.—This body meets this year in Lancaster on January 21st and 22d. The usual arrangements for excursion tickets will be made, application for which must be made to E. B. Engle, Secretary, Chambersburg, Pa.

We have no details of any special business, except that Mr. Meehan has been asked to make a verbal address on "The connection of Fruits and Flowers with the Progress of Civilization," which he has accepted, with the proviso that other duties shall permit him to attend as he hopes to do.

PENNSYLVANIA HORTICULTURAL SOCIETY.—Mr. J. E. Mitchell, a leading merchant of Philadelphia, who has long and faithfully served the Pennsylvania Horticultural Society as Vice President, has been elected to the Presidency of the Society, in the place of the late W. L. Schaffer, Esq., whose death we recorded some time since.

CHRYSANTHEMUMS AT THE NEW YORK SHOW.—Mr. Gerald Howatt gives the *Country Gentleman* some account of the Chrysanthemum Show at the recent Fair of the American Institute, from which we take the following, as giving some points in comparison with the plants exhibited in Philadelphia, of which we gave some account in our last. Following are some of the most prominent standards, grown in 10 and 12-inch pots, height of stem measured from surface of pot:

"*Empress of Modii*—White; stock, 2 ft. 9 in.; head of flowers, 2 ft. 9 in. diameter. *Hermoine*—Yellow; stock, 2 ft. 10 in.; head 2 ft. diameter. *Duchess of Edinburgh*—Stock, 2 ft. 10 in.; head, 2 ft.; flesh color. *Mrs. Prîndell*—White; stock, 3 ft. 6 in.; head 2 ft. diameter. *Beauty*—Flesh; stock, 3 ft. 6 in.; head, 2 ft. *Venica*—Flesh; stock, 3 ft. 6 in.; head, 2 ft. 4 in. diameter. *Fulgore*—Crimson; stock, 4 ft. 6 in.; head 2 ft. 4 in. diameter. *Orange Beauty*—Orange; stock, 2 ft. 6 in.; head, 2 ft. 6 in. diameter. *Sir B. Seymour*—Orange; stock, 2 ft. 10 in.; head, 2 ft. 6 in. diameter. *Mrs. C. L. Allen*—Pink; stock, 3 ft.; head, 3 ft. diameter. *Grandiflorum*—Yellow; stock, 2 ft. 6 in.; head, 3 ft. diameter. *President Parkman*—Pink; stock, 3 ft.; head, 3 ft. diameter. *California*—Yellow; stock, 2 ft.; head, 3 ft. diameter. *Venus*—Pink; stock, 3 ft,; head, 3 ft. diameter."

MASSACHUSETTS HORTICULTURAL SOCIETY.—The meeting on December 14th, though including the usual wide range of exhibits, was emphatically the Chrysanthemum Show. A correspondent kindly furnishes us with a list of the persons who obtained the premiums, but unfortunately there are few details that are likely to be of more general interest. In Dr. Walcott's collection there appears to have been seventy-five distinct varieties; in E. A. Wood's, sixty-nine; in Col. Wilder's, fifty four; from which it would appear that a great number of varieties are grown in collections about Boston. La Charmeuse is given as the name of the variety that obtained the premium as the best single specimen of a Japanese variety.

The only description of the exhibits as furnished to us is, that the plants were "remarkably fine," "most excellent," and "more magnificent than ever before." The foreign grapes exhibited were "fine," and the pears were "fine," while some Northern Spy and Tompkins County King apples were "excellent." The celery had "fine roots," while the large potatoes on exhibition came from the use of somebody's "patent fertilizer." Unfortunately for our readers we fear these terms will have no very precise meaning, and we have to regret, that it is all we can give of what appears to have been a grand and very useful exhibition.

THE
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AND
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DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

There is much written about planting in fall or planting in spring; about planting large trees or small trees; about pruning, grafting, or the general management of trees above ground; but about the tree beneath the ground few people know much. We are taught about the tree; but about the earth which is to sustain the tree, how little do we know? So much however depends on soil culture, that a few seasonable hints on this topic will not be thrown away.

We read of the wonderful success of the English gardeners with Rhododendrons, and other "American plants," in which are included a large number of the Ericaceæ or Heath family, and we are apt to attribute it to the moisture of their climate, which is undoubtedly favorable to the success of evergreens of all kinds; but when we remember that these plants are all natives of our country, the suspicion naturally arises, that it cannot be wholly to the atmospheric conditions that their success is due,—nor is it,—but it is rather to the great attention which is there paid to the proper culture of the soil. All plants require air and moisture for their roots, and when these roots are of a delicate, hair-like nature, extra care has to be expended in order to supply these conditions. If the water remains long in the soil, there will be no air there. The earth must be porous for the water to run rapidly away. On the other hand the earth must be of such a character that, though the air is permitted to pass through, moisture will be retained. A soil that is perfect for these hair-rooted plants, may be called a spongy soil, and yet of such a character that water can scarcely be pressed out of it. Now those who grow Rhododendrons and Azaleas in the old world, would never think of planting in stiff soil, but they go to great pains to get the soil just as they need it for the success of the plants. It is no uncommon thing for the earth for the American bed to be brought fifty or even a hundred miles. The writer has seen peat soil for the Rhododendron beds brought in vessels and unloaded at the docks like loads of coal. If the grower wanted these plants he would not say: My soil is limestone and Rhododendrons will not grow in that; but he digs out the limestony earth to a depth of two feet, and supplies its place with the peat, and thus he overcomes the natural antipathy of the earth. Peat is very good, it is so full of air and spongy, but it is by no means essential. Anything that will give an open, porous, spongy soil answers the same purpose. The writer has seen the Rhododendron growing as well in a pile of quarry refuse—the broken, useless stone,—after some manure has been placed in it, as he has ever seen in a bed of peat

In fact where peaty soil cannot be had, broken stone or gravel, or anything that will keep the soil aerated and moist, will do nearly as well.

And the lesson is good for all trees, as well as for Heaths, Andromedas, Kalmias, Rhododendrons, and such like trees and shrubs. Nothing likes to have water about its feeding roots, but insists on having air. Take a tree which grows in or nearly in water, in a state of nature, as a Cypress, an Alder, or Gum tree, and plant it in a swamp, it will not grow, or do very poorly, if at all. Naturally, it is only the few larger members of the tap root class that go straight down into the swamp. The feeding roots keep at the surface, through the moss or in the spaces that are moist always but never wet. But in planting we bury the roots of all kinds beneath the water where the air is not. So, if we want to plant a tree in a swamp we bring earth, or throw it up in a hillock, and plant the tree above the level of the swampy surface, and let it send its roots down of its own sweet will. The writer profited by this knowledge in his attempts to cultivate the Mammoth tree of California. When in California himself, he saw that these giants of the forest were originally swamp trees, though through the course of ages the localities had dried somewhat. Hitherto the trees in the East had been planted on ordinary garden ground, except a few in a moist ravine on the grounds of Ellwanger & Barry, at Rochester, New York. On the writer's return from California, trees were planted in a swamp so soft that a horse that once wandered into it could be barely got out alive. But the manner of planting was by getting a barrel, taking out the bottom, planting it in the swamp so that a foot or two was above the level, and earth filled in. On these elevations the Mammoth trees were planted, and they have grown like willows. By the time the barrels rot away, the surface roots will themselves find a way to creep over the surface soil. Many good gardeners who have wanted to plant trees on wet ground often ridge the earth, or throw it up into mounds and plant on them—on the ground in some sense, instead of beneath it—and then have surprising success.

Not only for trees and shrubs, but for flowers and plants of every kind, the first essential of success is an aerated spongy soil. This is often naturally the case; but when not so, nothing is usually more easy than to make it so. Even piles of corn stalks, brushwood, or similar material, buried deep in the soil, will often help to keep a flower bed or bed of shrubbery open and porous when nothing better is at hand.

COMMUNICATIONS.

LOPHOSPERMUM SCANDENS.

BY CHARLES E. PARNELL.

The climbing or scandent Lophospermum, Lophospermum scandens, is a very interesting half-hardy perennial climbing plant belonging to the natural order Scrophulariaceæ. It is a plant of vigorous growth, attaining a height of from twelve to sixteen feet, having cordate ovate pointed leaves which are clothed with soft spreading viscid hairs, and the beautiful rosy purple foxglove-like flowers are produced in the greatest profusion during the plant's season of growth. This variety is considered by all to be the best of the Lophospermums, and as its roots are thick and fleshy it can on this account be easily kept over during the winter season. It is a native of Mexico from whence it was introduced in 1835, having been raised from seed by Mr. Shepard, of the Liverpool Botanical Gardens.

This Lophospermum is a plant easily cultivated. In the flower border it delights in an airy sunny situation, a deep, well enriched soil, and an occasional watering during seasons of drought. Support should be given the plants before they commence to run, and care must be taken as to training the young and tender shoots. If all is well, and the plants were strong and healthy when planted out, they will commence to flower about the first of July and continue until frost. In the flower garden it will be found to be of great value for training up trellises, lattice work, etc., and it is equally as valuable for greenhouse cultivation.

When grown as a greenhouse or window garden plant, young plants should be obtained about the middle of June and potted into three-inch pots, using ordinary potting soil. As soon as the pots become well filled with roots shift into five-inch pots; at the same time pinch back all the leading shoots and continue this re-potting and pinching back until the first of September, when the plants should be brought inside and placed in their respective positions. By this time one will have nice, compact, well rooted specimens, which if given a light sunny situation and an average temperature of 55°, with an occasional application of liquid manure water, will reward us with bloom in profusion. Inside, the plants should be syringed occasionally, at the same time slightly fumigated with tobacco in order to destroy the green fly, to which pest the plant is unfortunately very subject.

The next season the plants can be well cut in and planted out in the flower border and given the treatment advised for young plants. It seems almost superfluous to remark that young plants must be prepared for another winter's bloom. Propagation can be easily effected by cuttings of the half-ripened wood at any time; also by seeds which are best sown early in March. Sow thinly and cover slightly in a well drained pot or pan of light loamy soil, and place it in any warm moist situation as near the glass as possible. As soon as the young plants are strong enough to handle pot them off into three-inch pots, keeping them close and moist until well established, then gradually expose to the open air and plant out when all danger of frost is over.

When grown as a pot plant ordinary potting soil will answer very well, but it is essential that the pot be well drained.

The generic name is derived from "lophos," crest, and "sperma" seed, in allusion to the fact of the seeds being furnished with a crested wing; and the specific name alludes to the climbing or scandent habit or growth of the plant.

Queens, N. Y.

PLANTING LARGE TREES.

BY FREDERICK LAW OLMSTED.

Ten years ago more than a hundred trees, of considerable size (from 20 to 50 inches in girth, or about 1 foot in diameter on an average), were transplanted on the Capitol grounds. They were not in a thrifty condition, and to adapt them to removal their roots were all cut off at a distance not greater in any case than 3½ feet from the trunk. Their branches were also closely shortened-in, reducing their heads to from one to two-thirds their original size. It was considered a question whether the trees would retain enough of vital energy to survive, and the operation was often referred to for some years afterwards as an injudicious and disastrous one. It is therefore desirable that attention should be called to the results as now to be observed.

The condition of two of the trees was regarded at the time as especially hazardous, and these were placed where in case of failure their absence would not be important.

After three years they were still living, and promising to live, but not to flourish; they therefore were felled.

Of the remainder no tree has died as the result of the removal, and those that have escaped serious injury from causes not connected with the removal are all now living and in a thriving condition. In general, their heads are much larger as well as much denser than they had been before they were shortened-in, and they are growing more rapidly than before their removal. Their rate of growth is also more rapid than that of trees on the ground of corresponding species and age, that have not been removed; the reason being that the soil of the latter could not be thoroughly improved without lifting them.

To more distinctly present the degree in which the operation has been successful, twenty of these transplanted trees have been measured, selecting those which, because of their size or other circumstances, presented the greater difficulties. The measurements are given below, and supply indices of the present thrift of the trees. Similar measurements are also given of trees of numerous sorts obtained from commercial nurseries, or from the indigenous woods near Washington; these when removed having been generally small saplings.

Trees of the list A (below) were moved by machine in the fall and spring of 1875-'76 and (except a few of the smaller, taken from the Botanic Garden) from a thin soil on a stiff clay subsoil to a prepared soil and subsoil (described page 15 of the Report of the Architect of the Capitol for 1882). Those from the Botanic Garden were from better soil and more sheltered positions.

The machine used is described and pictured in the Report on Forestry, prepared under the direction of the Commissioner of Agriculture, pursuant to an act of Congress, approved August 15, 1876, pages 84, 85. The roots of all were cut to "balls" (not frozen), generally of a diameter of 8 feet, none larger. Their heads were shortened-in fully one-third, in some cases two-thirds. Since transplanting they have been several times lightly top-dressed and, in periods of severe drought, have been watered. They have had fully the usual struggle with vermin, and most of the elms have this year been denuded of foliage.

Trees of the list B, except as stated, were planted 1876-'77. They had been obtained from commercial nurseries, largely of Washington and Baltimore, and when planted were saplings from half an inch to an inch and a half in thickness of stem and 3 to 6 feet in height. Those noted as "wild" were obtained from woods near Washington, and several of these being injured or stunted were, the second year, cut to the stumps, and the present growth is from the ground since planting,

In the column "girth" the circumference of the

tree is given at 2 feet from the ground; in that of "height," distance from the ground of the upper-most twigs of the tree; in that of "sweep," distance between opposite outer twigs; in that of "shoots"

A

No.	Common Name.	Girth.	Height.	Sweep.	Shoots.	Observations.
		′ ″	′ ″	′ ″	′ ″	
1	White Elm	5 10	51 6	47 0	3 1	Ulmus Americanus. Upright, 5 feet; lateral, 8 feet.
2	" "	5 11	66 6	42 0	1 3	" " Upright, 8 feet; lateral, 12 feet.
3	" "	6 5	61 0	35 0	1 11	" " Upright, 10 feet; lateral, 14 feet.
4	English "	6 9	60 0	42 0	2 5	" campestris. Upright, 8 feet; lateral, 12 feet.
5	Wahoo "	4 2	42 0	48 0	2 9	" alata. B. G. Upright, 15 feet; lateral, 13 feet.
6	White Oak	4 7	51 0	27 0	1 3	Quercus alba. Upright, 9 feet; lateral, 10 feet.
7	Willow "	3 4	40 0	26 0	1 8	" Phellos, trimmed to a pole. Upright, 18 ft.; lateral, 16.
8	Pin "	3 7	35 0	30 0	1 3	" palustris. B. G. Upright, 10 feet; lateral, 10 feet.
9	Royal "	3 9	28 0	36 0	2 6	" robur. B. G. Lateral, 14 feet.
10	Sugar Maple	2 7	38 0	32 0	0 10	Acer saccharinum. Upright, 6 feet; lateral, 7 feet 6 inches.
11	" "	3 2	35 0	27 0	1 0	" " Upright, 13 feet; lateral, 8 feet.
12	Norway "	3" 1	31 0	33 0	0 11	" platanoides. Upright, 12 feet; lateral, 10 feet.
13	Scarlet "	3 1	34 0	36 0	1 4	" rubrum.
14	Silver "	4 3	48 0	39 0	2 6	" dasycarpum. Upright, 18 feet; lateral, 19 feet.
15	Box Elder	3 11	35 0	42 0	2 5	Negundo aceroides. B. G. Upright, 19 feet; lateral, 13 feet.
16	American Beech	2 3	30 0	24 0	1 8	Fagus ferruginea. Upright, 16 feet; lateral, 6 feet.
17	Plane	3 10	40 0	38 0	3 2	Platanus orientalis. B. G. Upright, 18 feet; lateral, 14 feet.
18	Linden	4 4	42 0	42 0	1 1	Tilia Europæa. Upright, 5 feet; lateral, 7 feet.
19	White Ash	4 9	48 0	32 0	1 9	Fraxinus Americana.
20	Madeira Nut	4 1	32 0	33 0	1 7	Juglans regia. B. G. Upright, 6 feet; lateral, 6 feet.
21	American Holly	2 4	17 6	18 0	0 8	Ilex opaca. Heavily fruiting.
22	Horse Chestnut	5 2	36 0	36 0	0 7	Æsculus Hypocastanеum. This was one of two Horse Chestnuts near together. That originally the larger was not moved, and is now the smaller in girth, height and breadth.

B

No.	Common Name.	Girth.	Height.	Sweep.	Shoots.	Observations.
		′ ″	′ ″	′ ″	′ ″	
1	American Elm	3 4	36 0	24 0	.....	Ulmus Americanus.
2	" "	2 10	24 0	30 0	2 10	" campestris.
3	Cork Elm	2 9	29 6	26 0	1 7	" suberosa.
4	Planera	2 1	22 0	24 0	.....	Planera aquatica. Upright growth, 15 feet.
5	Over-cup Oak	1 8	25 0	15 0	0 8	Quercus macrocarpa.
6	Chestnut "	1 4	26 0	21 0	1 8	" Prinos.
7	Spanish "	2 0	27 0	15 0	1 1	" falcata.
8	Willow "	3 1	36 0	36 0	1 6	" Phellos.
9	" "	2 5	27 0	25 0	1 6	" "
10	Royal "	3 4	28 0	36 0	2 0	" robur.
11	" "	2 5	28 0	27 0	1 3	" "
12	Scarlet Maple	2 1	27 0	24 0	1 10	Acer rubrum.
13	Field "	2 7	19 0	18 0	.....	" campestre.
14	" "	3 10	24 0	24 0	1 4	" "
15	White Ash	2 8	24 0	18 0	1 3	Fraxinus Americana.
16	" "	1 11	23 0	21 0	1 0	" "
17	Coffee Tree	1 5	25 0	24 0	1 8	Gymnocladus Canadensis.
18	Oriental Plane	3 5	43 0	41 0	2 3	Platanus orientalis. Pennsylvania circle; imported, 1877.
19	" "	3 3	42 0	40 0	2 3	" " Upright; 30 feet.
20	Tulip	2 1	26 0	21 0	1 7	Liriodendron tulipifera.
21	Yellowwood	1 0	20 0	24 0	2 0	Cladrastis tinctoria.
22	American Chestnut	1 8	21 0	17 5	1 10	Castanea vesca. Upright; 16 feet; wild.
23	Shingle Oak	2 5	17 6	13 0	8 6	Quercus imbricaria. Damaged plant; recovering.
24	Norway Maple	3 7	42 0	35 0	1 0	Acer platanoides. Upright, 8 feet; lateral, 4 feet; 1876.
25	Sycamore "	2 11	38 0	27 0	0 6	" Pseudoplatanus. Upright, 6 feet; lateral, 4 feet; 1876.
26	Sugar "	3 7	36 0	41 0	0 10	" saccharinum. Upright, 6 feet; lateral, 6 feet 6 inches.
27	Buckeye	4 10	44 6	33 0	1 11	Æsculus glabra. Upright, 4 feet; lateral, 6 feet; 1876.
28	Turkey Oak	1 9	18 0	14 0	1 4	Quercus Cerris.
29	American Hornbeam	1 6	20 0	14 0	2 9	Carpinus Betulus.
30	Persimmon	1 2	17 0	.....	2 0	Dyospyrus Virginiana. Stump; wild growth from ground.
31	Oleaster	2 9	22 0	24 0	0 4	Elæagnus hortensis.
32	Angelica	8½	10 0	6 0	.....	Aralia spinosa.
33	Christ's Thorn	1 3	13 0	15 0	2 3	Zizyphus vulgaris. Loaded with fruit.
34	Cucumber	1 2	15 0	10 0	1 5	Magnolia acuminata. Planting height, 4 feet.
35	Yellow Cucumber	1 7	16 0	15 0	1 5	" cordata. Planting height, 3 feet.
36	Great-leaved "	10	13 0	7 0	1 5	" macrophylla.
37	Sassafras	1 6	17 0	15 0	1 8	Sassafras officinalis. Wild.
38	Osage Orange	1 5	20 0	30 0	.....	Maclura aurantiaca.
39	Catalpa	2 0	19 0	24 0	0 10	Catalpa bignonoides.
40	Golden Catalpa	2 8	23 0	24 0	2 0	" " Var. aurea.
41	Japan "	2 4	29 0	22 0	3 0	" Kæmpferi.
42	Cedrela	1 7	27 6	6 0	4 0	Cedrela sinensis. Lower laterals removed.
43	Dogwood	1 6	12 0	15 0	8 0	Cornus florida. Stump; wild.
44	Redbud	2 2	14 0	24 0	1 8	Cercis Canadensis. 1876.
45	Sweet Gum	1 9	23 0	17 0	1 3	Liquidambar styraciflua. Wild; upright, 19 feet; 1876.
46	Lime	2 2	22 0	21 0	1 1	Tilia Europæa.
47	Scotch Birch	1 7	28 0	18 0	15 0	Betula alba. Upright, 24 feet; 1878.

measurement of shoots of this year's growth at ends of lateral branches (usually the trees are well-balanced and, except elms, symmetrical). The entire upright growth and "lateral" growth on one side in ten years after planting from limbs then stumped is given where observed. In the last column "B. G." means from the Botanic Garden. The measurements given were made 14th 15th and 16th of September, 1884. Measurements are in feet, or in feet and inches.

[We give the above from a recent report of the Architect of the Capitol at Washington, as an extremely interesting commentary on the prevalent opinion, industriously fostered in some quarters, that there is any serious difficulty in getting large trees to grow. In this part of the world an experience of thirty years has shown that it is not necessary for even the expense of the "ball of earth" cared for in the Washington experiments. The transplanter commences four or five feet from the trunk, gets all the roots he can, and carries as little earth as possible. A cart is placed up against the tree, the shafts lashed to the trunk, a rope attached to the top of the tree, and the axle serving as a prop for the lever, a ton or two of tree is easily lifted. A horse is attached to the tail end of the cart, and, root foremost, the tree is hauled and dropped into the hole prepared for it. A tree, by this plan, 25 or 30 feet high, and with a trunk three or four feet in circumference, can be dug, taken a mile and replanted for about $25, and more safely, we think here, than by the ball method.—Ed. G. M.]

SCRAPS AND QUERIES.

Worms in a Rose-bed.—A reader, New Jersey, says: "I send enclosed in this a sample of worm that is very troublesome to me in the greenhouse, on the benches covered with soil. It destroys the roots of plants in pots, particularly geraniums. Thinking that you might possibly know of a remedy I address you. I have been an interested reader of your Monthly for over two years, and have in that time been repaid, ten times over, the price paid for it, and would not now do without it if it were to be obtained at any price within reach of a gardener."

[The creatures were small centipedes, and are not known to be specially injurious to vegetation. They make trouble sometimes by keeping soil disturbed. Watering with clear lime-water will get rid of them, and be no injury to the plants.—Ed. G. M.]

Myosotis Eliza Ganrobert.—Mr. F. E. McAllister, of New York, calls our attention to this remarkable variety of Forget-me-not. The flowers are in a certain sense double, having double the number of lobes to the corolla that is usual in this family. The flower is from a quarter of an inch to a half inch across. From the description we

Myosotis Eliza Ganrobert.

should judge it would be a very desirable addition to our garden flowers, and be a particular favorite with those who desire to grow flowers for cutting purposes. Like almost all of the Forget-me-nots, it is of a beautiful blue. In foreign catalogues it appears under the formidable name of Myosotis alpestris, grandiflora, robusta, &c.

Japan Irises.—A correspondent says: "I like the Japan Irises. I have some seedlings of immense size, and with almost full double flowers, nearly 8 inches in diameter. They please me much. But you have no doubt the new named varieties, if not choice seedlings of your own. The first ones that I tried did not strike me as anything very great, but in the past two or three years I have changed my mind in regard to this class of Iris."

Propagating Roses.—"Carrie B.," Pittsburgh,

Pa., asks: "Can you tell me how to raise plants of a rose we value very much? We know nothing of grafting or budding, but suppose the plant can be raised from slips, though some put in last year did not grow."

[Sometimes cuttings of wood taken before the leaves push, planted in a shady place, but not a dry place, will grow, but more certainly if planted in fall and kept from severe frost. Most lady gardeners, who have no greenhouse, would put these pots of autumn planted rose cuttings in a room window, and get them to do very well. Some amateurs have excellent success by taking the young growth when half mature, and placing them in saucers of mushy sand, and setting them in the full sun. Half ripened wood is generally relied on by florists for rose propagation. If the plants have been grown under glass, cuttings from them seem to root more easily than when grown wholly in the open air.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Plant culture, as an art, has scarcely kept pace with other departments of gardening. A fine, and really well grown specimen plant, is too frequently the work of time or circumstances, rather than the plant-grower's skill. Very few persons, indeed, start out deliberately to grow a good specimen plant; and, indeed, the knowledge of the great pleasure there is in good plant growing, has been nearly lost to mankind. The plant growers of the last generation had much more of these horticultural pleasures than we. Perhaps they overdid the thing, and the lampooners got after them and destroyed the whole thing. It was, indeed, a rare old sight to see the old plant grower's potting shed. There were as many compartments for all sorts of special soils and manures as drawers and boxes in an apothecary's shop, and the prescriptions for successful plant growing were no less curiosities—an eighth of this, a sixteenth of the other, a thirty-second of something else, with perhaps a pinch of some soil condiment and a shake of another, like salt and pepper in the old cook books, set forth the essential conditions of success. It was all too good to be true, to the more careless moderns. Now, they get any sort of earth, put a little manure and sand to lighten it; and this is potting soil. If any plant likes it, well and good; if not, in the classical language of the school-yard, they may "lump it;" and this is the end of all. But there is no doubt that all plants have peculiar tastes, which we may pander to if we will that they should do their best. Some have a sweet tooth for goodies, and others prefer what a good set of molars could prepare. Some call for *café lait*, others for *café noir;* here one expects a *puree* of something or another, while the other can be put off with corn beef and potatoes without a sigh. Of course you can grow a plant in "any good soil" as the flower books tell us, but the plant grower will find what it pays in pleasure to remember, that they have odd whims and queer fancies as well as other living things; and as with other living things, we get the most out of them when we humor them.

In the potting of plants there is much to study as well as in the soil. Plants like it fresh—that is, fresh soil. To grow a plant well we must pot it often. If we put a small plant into a large pot, ten to one the leaves will get yellow after awhile, unless the plant be some rank growing, weedy thing. The roots rot—that is, the feeding roots rot—gardeners say, the soil sours. To guard against this, as soon as the little pot is full of roots, it is put into a larger one—one but just large enough to get a little more earth between the old ball and the new pot. In a few weeks we go at it again, and so we continue every few weeks, so that before the season is over a plant that started in a 3-inch pot finds itself in a six or more, and when it is so grown manure water does not hurt the plant; it rather enjoys and laughs over it. We cannot do this with the little plant in the large pot; manure water then makes the sour soil still sourer, and the end soon comes. Oh! how glorious used to be the old-fashioned Pelargoniums—Martha Washington we believe is the American name—grown on some such plan as we have dotted out. Plants in six months two feet high and two feet

thick, with leaves as large as saucers, dark and glossy, and the earliest one keeping green till the last flowers had blown—hundreds of flowers on each single plant. Shall we never see these times again? We think we shall see these famous times again. Gardening, as an art, is inseparable from the best advances of man. The love of beauty—the love of flowers, is one thing—but mere cold, passive, receptive love, is but half the pleasure of life. To create and shape the beauty we admire, is the full measure of earthly happiness. Pygmalion of ancient story had possibly more pleasure in the statue he made, and to which Venus gave life in order to please his enthusiasm, than any of us ever took in the grandest picture gallery in the world.

COMMUNICATIONS.

CULTIVATION OF THE CYCLAMEN.

BY MARTIN J. EDMONDS.

Cyclamen Persicum and its varieties can be raised from seed with the greatest ease by sowing them early. Latter part of January or February I think is about the best time to sow. Purchase a packet or two of seed from a reliable seedsman, of a good strain, and you will have all sorts of different shades of color, from a pure white to the deepest red, and spotted. The soil I use for seedlings is good loam, mixed with a fair share of sharp sand. Sow in a seed pan, well drained, and cover about a quarter of an inch deep; water them and stand them in a gentle heat. Where they stand must be clear from slugs. The best way to guard against these is to take a seed pan of a larger size, make it water tight, fill it with water, invert a flower pot in the center, the bottom just above the water, and stand your seed pan on it; then perhaps you will have good seed and not bad. It often happens that the small leaf which appears at night has disappeared in the morning—not damped off, but devoured by slugs. As soon as the seedlings are large enough to handle, pot them in small pots, and cover them about half an inch deep. Water them as often as they need it, and shift into a larger pot when required. A four-inch pot is large enough to bloom them in. If they are well taken care of they will bloom in about ten to fifteen months. If large strong corms are desired for future blooming, pinch off the seed pods as soon as the flower drops. After they have done blooming, water them more sparingly till they go to rest naturally, and then stow them away in some cool and airy place free from sun and rain, until the time comes to re-pot and start them again. I pot all I have the latter end of August or the beginning of September. Shake all the earth from them, and pot according to the size of the corm. A five-inch pot is large enough for the largest corm, so long as there is room enough to pass your finger between corm and pot. Old corms I do not care to cover, especially where the crown is the shape of a hollow crowned parsnip. Stand them on a board outside in the shade till they begin to grow, or till there is danger of frost, and then remove them to a shelf in the greenhouse, near the glass where they will get plenty of air. As soon as they begin to show their flowers give them some liquid manure, every other watering, and then you will have more flowers than leaves. If they are wanted to bloom earlier than January, place them in stronger heat, but 45° at night and 50° by day is hot enough till they show their flower buds. The above is my treatment, but it may not suit every one. The secret I believe, if there is any, is the drying off and the rest they receive. If any manure is used, use it sparingly, and make up for the deficiency with manure water. Where they are grown by the thousand, and a house is devoted to them, they are very easily grown. There has been much improvement, both in size and number of flowers, made in late years by hybridizers. A plant a few years ago with two or three dozen blooms upon it was considered good, now they are commonly seen with a hundred. *Gard. to J. McCreery, Esq., Inwood-on-the-Hudson, N. Y.*

[Read before the N. Y. Horticultural Society.]

A REMEDY FOR ROSE MILDEW IN GREENHOUSES.

BY A. VEITCH.

Perhaps the florist has few more subtile enemies to contend against than mildew, and for this reason much has been written upon the subject, both as regards its prevention and its cure. But as it is one of those visitants which "walketh in darkness" and makes no sign where the next point of attack shall be, even the most watchful frequently suffers much loss before remedial measures can be applied; and even these, when applied, do not always prove an unmixed good.

For years past I have been familiar with a number of remedies for this disease and believe that several of them may be advantageously applied, but it is only recently that a cure that is safe,

simple and efficacious, has come to my knowledge. Sulphur, as is well known, kills mildew, but its application is not infrequently attended with disastrous results; and just how to prevent this lies the merit of the remedy we recommend. It consists of sulphur and linseed oil mixed to the consistency of paint and brushed on the flues or hot water pipes. In this state it can be freely used without hurt to the most delicate foliage; but how the oil neutralizes the scorching quality of the sulphur without weakening its power to kill the parasite is more than I can explain, but I do know that it has this effect, and therefore may be relied upon as a safe remedy for this troublesome pest. *New Haven, Conn., Dec. 31st, 1884.*

CYCLAMEN FLOWERS.

BY GEO. C. BUTZ.

Cyclamens will soon throw up their pleasant flowers that droop their heads in modesty and blush to the tips of their lengthened ears, as if conscious of their own admired beauty. It may not be amiss to call attention, at this time, to a well-known fact in the physiology of flowers, which I found to be quite marked in the case of Cyclamens. That is, if flowers are fertilized, either naturally or artificially, the strength going to the flower is entirely utilized in developing the ovary and ovules; and consequently the minor parts, generally those possessing beauty, wither or fall away in a very short time after such fertilization.

On the 5th of February last I selected a number of good flowers of Cyclamen Persicum, all of which had opened the previous day, labeling them in three divisions. Of the first division the flowers were all carefully fertilized; those of the second I immediately deprived of stamens and stigmas, to make fertilization impossible; those of the third were left undisturbed. On February 18th the corollas of the flowers in the first division had all fallen; those of the third were gone by the 20th inst.; while those of the second division did not begin to fade until March 10th. Because of the favorable position of stigma and stamens every flower is more or less fertilized, although not always maturing seed. As a matter of fact, the pods of the first division above matured an average of sixteen seeds, while those of the third division, only five.

It is no trouble, considering the great economy in beauty, to take a pin and break away the anthers as soon as the flowers open. Thus, we can prolong the life of the individual flowers to twice the length of their natural existence.

EDITORIAL NOTES.

PAINTING HOT-WATER PIPES WITH GAS TAR.—No one who reads the GARDENERS' MONTHLY paints the pipes with gas tar; but there are some who have not this good fortune, and they, after getting into trouble, worry our readers to help them out. Hitherto no successful remedy has been known, but to take down the pipes and burn out the enemy. This will scarcely do on a cold night. As well leave the creosotic fumes to do the work as Jack Frost. But in the Old World they have unlucky people who cannot subscribe to horticultural periodicals—as well as here. One of them got into trouble, and this is what a correspondent of the *Gardeners' Chronicle* advises in regard thereto: "I think Mr. Bishop will be able to remove the tar from his hot-water pipes by first coating them with muriatic acid, or with vitriol diluted in water, and then afterwards washing them with water. It would be the best plan to wash them with a brush, as great care must be taken that none of the mixture touches the hands."

A CHICAGO ORCHID GROWER.—The Eastern States are not alone in the love of these curious flowers. Mr. Chadwick of the Board of Brokers of Chicago has a very fine collection, which forms the pastime of his leisure hours.

PANAX VICTORIÆ.—When our English cousins find a new plant in the general order of things, they name it in honor of collector, the owner, or some well-known cultivator, botanist, or patron of gardening. When there is some more especial feature of admiration they look around for some military hero, like Wellington, or some member of a royal house, to give more honor, as they think, to the fortunate find. When the great water lily of the Amazon was discovered, only the name of Victoria could distinguish it; and Victoriæ has been the specific name of a number of things supposed to be several degrees above their fellows. In introducing this plant Mr. Bull has again taken a liberty with the name of his sovereign, and given us the plant we now illustrate as Panax Victoriæ. How he feels justified in this appellation we may gather from his own description, which we here append:

"This is a distinct and very graceful stove plant, thickly furnished with leaves of a remarkably elegant character, forming a dense plumy gracefully recurving mass of pleasingly variegated foliage. The leaf-blade is ternate or almost pinnate, the lateral leaflets forked or trifid, the upper and terminal one larger, simple, ovate, the edge lobed and spinosely toothed, and having the border prettily margined with white, which gives the plant a remarkably lively and pictorial character. It is a native of the South Pacific Islands, and is one of the most lovely and elegant variegated plants of modern introduction."

We may add that Panax belongs to the same family as the Aralia of our woods, of which the Angelica tree, Ginseng, and other plants, are members, all of which have very ornamental foliage,

Panax Victoriæ.

and are popular in some of the better specimens of landscape gardening. Where the winters are severe it will no doubt be classed as a cool greenhouse plant, but will be excellently well adapted for what is known as sub-tropical summer gardening.

THE CHRYSANTHEMUM DISEASE.—Of late years a disease has attacked Chrysanthemums, which seriously detracts from the pleasure of their culture. The leaves are attacked by a fungus in early summer, and by autumn there are but few leaves left on the lower portions of the plants, the flower stems are weak, and proportionately small. Mr. Worthington G. Smith finds the fungus to be one closely allied to the famous grape mildew, and that it is the Oidium Chrysanthemi of Rabenhorst. As figured in the *Gardeners' Chronicle*, magnified four hundred times, the plant is upright, in three or five segments, representing a link of sausages, the topmost one of which is shorter and thicker than the one next to and attached to the Chrysanthemum. As sulphur was found to be of so much value in the grape mildew, it may be of equal service here.

ON THE CULTIVATION OF CHRYSANTHEMUMS.—Like the greater part of herbaceous plants of this class they are tenacious of life, and easily grown; but if they are to be cultivated well, a regular system of management is necessary. After the flowering season is past, and the old stems cut down, the plants should be removed from the greenhouse or conservatory and placed in a cold frame, when they are merely protected from severe frost. Here they should have plenty of air, and on fine days the lights should be drawn quite off and the plants fully exposed. When the winter is mild they will stand very well unprotected, but owing to their having been grown and excited in the greenhouse they are more apt to suffer from severe weather afterwards than if they had been planted out in the open air; for this reason it is always better to have the means of giving them some slight protection.

We saw some magnificent plants in the present season which had produced flowers last year; the stems had been cut down and the old plants treated as described above. They were taken into the greenhouse this autumn, just as they had been left at the end of the previous season, without any repotting, and then manured once a week with manure water, made by dissolving a teaspoonful of sulphate ammonia in a gallon of rain water. The plants were strong, produced beautiful bright green foliage and splendid blooms, equal to any that had been raised from newly planted cuttings taken in June this year. Chrysanthemums are very gross feeding plants, but they will not stand much surface-manuring until the pots are well filled with roots, when they may be watered with liquid manure twice or thrice a week, according to circumstances.

Where exposed fully to the sun's rays they require a very abundant supply of water, which ought never to be neglected, otherwise the underleaves fall off, and the plants become unsightly. Liquid drainings from cattle sheds (diluted with water), sheep droppings dissolved in rain water, a teaspoonful of guano, sulphate ammonia, or nitrate of soda dissolved in a gallon of rain water, or a handful of soot to a gallon of water—any of these will be found of great service for surface watering of chrysanthemums. The soil employed for the growth of these plants can scarcely be too rich; about equal parts of loam, stable-dung, leaf-mould, and sand, make an excellent material for their culture.—*Gardeners' Chronicle.*

HOT-WATER PIPES.—Having for a number of years studied the question of economically heating incubators and chambers for hatching germs, I have been obliged to give a great deal of attention to the subject of boilers and hot-water pipes. The experience gained was always in favor of a reduction of the quantity of water and an increase of heating surface. Working on in this direction I arrived at the result of a half annular pipe instead of the usual system of annular piping. These

half annular or "crescent" pipes, as I have called them, are somewhat on the principle of a saddle boiler, and the small heating apparatus which I have as yet constructed on this principle have fulfilled my most sanguine expectations. A 7-feet length of ordinary 6-inch annular piping contains 8½ gallons of water, whereas my crescent pipes, same length and same heating surface, contain only 5 pints of water. The obvious economy of heating power is a great gain, as it enables me to make heating apparatus sufficiently powerful for any small-sized greenhouse; this can be worked by an oil lamp, costing from 9d. to 1s. 6d. per week, according to number and length of pipes. So many amateur gardeners object to the trouble attendant upon coke or coal furnaces that I get constantly asked for such a heating apparatus. Again, the action of the heat is so rapid that no time is lost, and the quantity of water required to be heated is, as before described, very small in proportion compared to that necessary for heating an annular pipe. Another advantage to be gained by these pipes is, that at the unions the pipes can be reversed, and they form excellent evaporating tanks for water where moisture is required. I may say that it is the opinion of manufacturers experienced in hot-water piping that this form is very likely to become general, in hothouses at any rate. Lengths of these can easily be inserted with the ordinary circular pipes.—*Thomas Christy, in Gardeners' Chronicle.*

CULTIVATING THE DOVE ORCHID.—A correspondent of the *Garden* tells us that in a collection in England this contains a fine plant, which has again flowered with great freedom. It has produced six flower-spikes, which have grown to a height of 4 feet. It will therefore be seen that the specimen here is a fine one, and it occupies a rather large pot. It receives a liberal supply of heat and moisture, which evidently suit it, for the bulbs are unusually large and as green and plump as it is possible for them to be. It is always given a rest in a cooler and dryer house than the stove when it has completed its growth, but water at the roots is not withheld so long as to cause the bulbs to shrivel.

SCRAPS AND QUERIES.

OXALIS LUTEA PLENA.—A correspondent asks: "Can you or any of your readers give me any information concerning Oxalis lutea plena? It is described as having large, double, yellow flowers, resembling dandelions. I should like some information as to its origin."

[The true Oxalis lutea is but an old synonym of Oxalis corniculata, the well-known "sour-grass" of children, and a common weed. A double variety would be very pretty; but we should suppose it would look like a very small dandelion.—Ed. G. M.]

DISEASE IN CARNATIONS.—"W.," Sharon, Pa., writes: "We make the forcing of Carnations a specialty, and this fall when we lifted our plants, we noticed a good many that looked yellow and sickly, and unfit to plant on the benches. All that showed signs of disease we rejected, and we thought we had as fine a show for Carnations as any one could wish, but they have been dying out right along, and unless we can check the trouble, shall have to abandon that branch of our business. Will some reader of the MONTHLY who makes a specialty of forcing Carnations, suggest a remedy? One man told us to try saltpeter ammonia, but we can't find any such article in our drug stores.

"Another suggested syringing the plants with ammonia water. In pinching back our young plants during the summer, we hold the plant with the left hand and pull the tops out, thus detaching them at the joints; and it is right at the joints that the trouble seems to be, or just below the joints rather, inside the stems; the pith seems to rot or rust like, and we thought perhaps this way of pinching them was what made them go as they do. We have never had any trouble of this kind until last winter, when we lost our entire crop of two thousand plants. We would like to hear from a number of Carnation growers as to their experience in this line, also about kind of soil used, how often it should be changed, temperature to force in, &c.

"Mr. John Murchie suggests that we quit striking our young plants from plants that have been forced, which we consider good advice. Any light that can be given through the MONTHLY will be duly appreciated."

[This is the well-known Carnation root fungus, and is one of the best illustrations known of the modern discovery that some forms of parasitic funguses will attack healthy vegetation. Its presence in a bed of Carnations in the open ground is detected by the practiced eye, by a slightly paler tint on one plant. In a few weeks a circle of a number of plants will show the pale tint, the fungus having spread from the one it originally fed on, to those around it. If examined with a pocket lens the fungus will be seen like small cobwebs over the growing fibres. The affected plants are taken out as soon as seen, for although the thread (mycelium) which propagates the plant is in the ground, like all plants it gathers strength by what it feeds on, and does not spread so easily when it is kept from its food. Pale plants are never taken into the house for forcing. There is hardly any use in attempting to combat the enemy after it has found a lodgment in the benches, as the injury has been mostly done before the plants are taken inside. However, if any of our correspondents know better, we should be glad of their experience. Usually when the fungus gets into a stock, it is carried on by propagation, until it almost gets to be permanent, and then we hear that that variety is

more subject than others. But it is only that propagation has been continued from a stock that that has caught the fungus. It is best to change one's stock sometimes, and much better to get new kinds from seed once in a while. These are for a time free from these troubles.—Ed. G. M.]

Destroying Plant Lice.—"I. J. L.": "I had a lot of Chrysanthemum plants last summer, in the open ground, covered with Black Aphis. I applied Paris green, but it had no effect whatever. Are they poison-proof or what?"

[The aphis' do not eat as potato beetles do, but live by suction. They bore the plant structure and suck out the juices, hence poisonous applications are of no use as against them. Aphides, which include the whole tribe of black and green flies, can only be attacked through their breathing organizations. Smoke, oils, and such like must be employed.—Ed. G. M.]

Gas Tar on Hot-water Pipes.—Mr. Henderson kindly sends us another wail, from "Dr. W. H. H.," Frankfort, Ky., and remarks: "Here is another victim. If you wish to benefit your species, put up on every issue—Gas Tar!! Beware!!—and even then though they would tumble in."

But the fact is, this gentleman's name is not on our subscription books. We insert, however, the letter as a suggestion to our friends that if they have any neighbors who love gardening, but do not subscribe to the Gardeners' Monthly, it might save them no end of vexation and cash, to take the magazine. But here is the letter:

"Please tell me why many plants in my conservatory look as if the leaves had been browned by a hot sunshine. Even my young thrifty geraniums have suffered severely. A large Niel in the end of the house, putting out hundreds of young thrifty shoots and leaves, has dropped every young leaf. My conservatory is heated by a No. 4 Hitchings Conical boiler and the temperature is very uniform, from 50° at night to 65° or 70° during the day. I am at a total loss to account for it. Can it be from the pipes? Now, the pipes the plumber used are 4-inch pipes and are coated with some black substance that gives out a strong smell of coal tar, when the water gets very hot. Several times in the morning I have noticed this so strong as to be very unpleasant, and look as if there was smoke in the house. Do you think it can be this gas that is doing the mischief? I noticed this state of things after two particularly cold nights, when the firing had to be increased and the water in the pipes got so hot as to melt the coating on the pipes. I would be glad to have your opinion on this, for it troubles me very much."

Watering Plants with Warm Water.—"I. C. W.," Fishkill, N. Y., writes: "Will you say through the Monthly whether plants in general, roses, carnations, violets, etc., in particular, would be benefited by watering and syringing during the winter season with warm or hot water instead of cold? If hot, how hot do you think would be advisable? Immersing plants in hot water, 130°, is said to destroy insects without injury to the plants. Would syringing with water at that temperature have the same effect? Do you think plants as above would be forwarded, or their blooms be forwarded, if always wet with quite warm water instead of cold?"

[The advantages of bottom heat, as it was called—that is to say, heat applied to the roots of plants—were always deemed very great by gardeners of the old school, and though some special cases have been cited to show that there was not much advantage in these systems, we are induced to think there is more value in it than modern cultivators are disposed to give it. The argument against it is that it is atmospheric heat that makes plants grow, and that, growth once started, the roots will of necessity respond, even though the roots be actually encased in frost. We all know that a peach or apricot against a sunny wall will push into flower in midwinter, though snow and ice cover the ground above the roots, if a few very warm midday suns shine on the wall or fence against which the branches may be traced. Again, in grape culture under glass it is among the commonest of experiences, where the vines are in outside borders and the tops only under glass, and in a forcing house, that the tops will come out into leaf and flower just as well, in just as short a time, when the roots are encased in a solid frozen mass of earth, as when the border has been protected wholly from frost. It must be confessed that these facts are very strong as against any value from the application of heat, whether by means of warm water or otherwise, to the roots of plants.

Yet we cannot believe that the great mass of belief and practice of the old gardeners, who so loved to provide means for bottom heat, were absolutely baseless; and we prefer to say that careful experiments on the advantages of hot and cold water in plant culture are yet among the very desirable things.

In regard to syringing with hot water, instead of dipping, we cannot say. We do know that turning the plant in the pot upside down and immersing it for an instant in water of a temperature of 130° will destroy any insect; but it seems such a waste of hot water to use it for syringing, that we suppose no one ever thought to so employ it. We know of no reason why, where hot water is abundant, it should not be used; only careful experiment can decide this. Very soft and tender leaves may be injured at a temperature of 130°; on the other hand, after passing through a syringe the original temperature may have to be increased in order that the insects may have the full benefit of the fatal degree.—Ed. G. M.]

Mildew.—"Rose-grower," Brooklyn, N. Y., writes: "It seems to be granted now, that some of the lower forms of plant life, of which mildew is a type, will attack the healthiest vegetation, though at one time it was supposed to be only connected with disease. If this view is correct, how can we prevent mildew and such attacks? What is the remedy?"

[It may be taken for granted, we think, that fungus, as a general rule, only attacks that which is diseased. The cases where it attacks wholly healthy vegetation, though such cases are undoubted, are quite exceptional. Between these, however, are a large number of cases, where the plants are supposed to be healthy, and are attacked by fungus, which cannot be said to be healthy in the fullest sense of this term. For instance, a lot of cuttings are put into a propagating bench to root. They are perfectly healthy; but fungus appears in the bench, and may clear the whole lot in a day or two. In a certain sense the fungus has attacked healthy vegetation. But the cutting is in unfavorable conditions of life. It has no roots. Numbers die without any fungus attack, simply because the unfavorable vital conditions have conquered. We may say that low vital conditions, as well as absolute disease, favor the growth of mildew. In the case of mildew on roses, mildew on grapes, mildew on lilacs, oaks, and other things, we know in many cases what these conditions are. Our belief is, that where the conditions of good health are tolerably perfect mildew or fungus troubles of any kind seldom bother the cultivator. In the case of the rose and carnation, which are so often attacked by fungus in various forms during the winter, the unfavorable conditions of the roots are often very apparent.—Ed. G. M.]

Fruit and Vegetable Gardening.

SEASONABLE HINTS.

We feel in our seasonable hints this month, like making a full plea for better gardening all along the line. As the Secretary of the Worcester County (Mass.) Horticultural Society somewhere says: to take up many of our so-called horticultural writings, a stranger would be apt to think that its mission was fulfilled, when we had produced a Thimbleberry; or that the acme had been reached when some pioneer along the Mississippi stumbled on the Wild Goose Plum. Very few of our new fruits are equal in value to the older ones they have displaced. Something that is tough and hardy and will grow without a thought and without a care—a raspberry that is so full of seeds and has so little pulp, that it will prove a "first-rate carrying berry"—a strawberry that will ripen its whole crop in a day or two, so that there can be economy in gathering—a peach that will never ripen, so that we may get it to market before it rots—these be the favorites of the day. Now, all this and more is very well. There should be a paying profitable side to fruit growing. Our magazine does all it can to aid and advance it. But surely this is not the be all, the end all of fruit culture! If we have the time and the will to grow a delicious plum, why should we forever have to be satisfied with some compound of tannic acid and mashed turnips, simply because it will not pay the market man to fight the curculio in the only way it can be fought? Why have nothing but a "good cropper" and one that is "locally adapted" to take care of itself—because a much better thing costs some time and trouble to care for?

But we sometimes think that even the market man does not do himself justice in his race for new fruits.

In his efforts for the nimble penny, he forgets that there is often much more substance in the slower sixpence. In some departments where a slower result is a necessity, really new and good varieties, improvements on the old, are overlooked.

It must have been for some time apparent to far-seeing orchardists, that our cultivators are not keeping pace with progress, as they should do. It is a notorious fact that a large number of our best orchards do not yield as they once did; varieties once popular are popular no more; and the eminent place which American apples once held in European markets is becoming filled by the apples of Canada, and especially of Nova Scotia. Apple orchards give out much sooner than they used to do—fruit does not keep as well as it did—and the flavor of even popular kinds is not equal to the past. There are exceptions, but the undoubted tendency is in these directions. Apple growers are, we think, slow to adopt new notions that may advantage them. New varieties are certainly not in their vein. There have been innumerable good kinds introduced during the past quarter of a century, some of which are better, and would certainly be more profitable if some good judgment were to follow up and make good use of them. The old stale kinds are yet the ones we find in our markets, and the good new ones are comparatively unknown.

Last season while looking at some apple trees on the grounds of an amateur in North-eastern Pennsylvania, and noting the wonderful beauty, productiveness, and healthy vigor of some comparatively unknown kinds, we wondered whether there would ever be any way to make them well-known to the general cultivator; and whether we were to be forever dependent on the old thread-bare kinds? There were Huttensteins, York Imperials, Prinz and Water apples, certainly superior in manifold ways to many everybody wants to grow, and yet few know of them.

We think the modern agency system has much to do with the slow progress in improved knowledge. In old times the planter would visit the nursery himself, see the fruit in the specimen orchard, and judge for himself. Not a quarter of those who would once visit a nursery, go there now. Numbers never go at all, and all they know of fruits is what the glib-tongued traveling agent tells them. The agency plan has its good features; some—hundreds—have fruit trees, who never would enjoy this pleasure under the old system. But it is not favorable to the progress of improvement, and this we must all regret. Large numbers of nurserymen now have no specimen orchard at all, and those who have, take far less interest in them than in former times, because there are so few friends to enjoy the pleasure with them. We strongly advise our friends, at this planting season, to get a tree or two each wherever they can, of some of the most promising kinds, and try for themselves how they will do. It may be that they will be glad to have the material to top-graft a whole orchard with the better kinds some day.

COMMUNICATIONS.

KALAMAZOO CELERY.

BY A CORRESPONDENT.

Midway between Detroit and Chicago lies the beautiful city of Kalamazoo, sometimes appropriately called Celeryville. Fifty tons of the esculent are expressed from Kalamazoo daily now during the height of the shipping season. Kalamazoo celery is famed from ocean to ocean and is the brand called for everywhere. Shipping begins about July, increasing till the holidays, then gradually decreasing until the crop is disposed of in the spring. More growers are annually holding their crop until the firmer markets of spring. Three thousand tons were shipped from this point alone during 1883, and the shipment for 1884 is estimated at 5,000 tons. From 1,500 to 2,000 acres are devoted to the industry in this vicinity, and the production of a superior article has never exceeded the demand. Twenty thousand stalks are easily raised during the season on an acre, and the wholesale price ranges from fifteen to twenty-five cents per dozen.

Marsh land has become the home of this luxury and Hollanders are the main producers. Driving north from Kalamazoo through the country, one passes great 100-acre farms devoted to the sweet-scented celery, reminding one of that Methodist hymn:

"Sweet fields beyond * * *
Stand dressed in living green."

One would never forget a drive through the celery gardens in any direction from Kalamazoo; the long rows keeping their bright green till November, as crop follows crop; and the fields being unmarred by fences or anything except the cozy cottages of the thrifty Hollanders. The irrepressible Yankee has, of course, bought large tracts and gone into its culture, but the mass of growers cultivate from three to ten acres, raise the choicest

article and make the most money. Too much expensive hand labor is required to justify going into the business on a large scale.

The celery business is of more value to a town than can be shown by figures. The drainage necessary to celery growing is worth everything to the health of towns. Celery can be raised on any marsh properly drained, and it is not necessary that the marsh lie along the mystic waters of the Kalamazoo. Yet it is a recognized fact that specialties hover together. Celery growers and shippers have here an association to protect their interests and disseminate information useful to the industry.

Practical celery growers can teach most men who write books on the subject their A B C's, and the jolly Dutchman could wake up in the night any time and laugh at some of the advice given.

Celery growing resembles farming wonderfully about one thing. The campaign opens about January 1 and, save an occasional holiday, it is "hurrah, boys," till about December 31.

Celery growers are beginning to raise their own seed, which heretofore has been a serious item of expense. There are about fifty principal varieties: most popular among them are the White Walnut and Crawford.

The objective points for perfect celery are soundness, brittleness and keeping qualities. The seed is sown in narrow rows in hot-beds, and this produces plants for the early crops. As soon as the weather will permit, seed is sown outdoors in beds of about a square rod of plants for a square acre of land. Plants are set in May or as soon as the size of the plants and the geniality of the climate will permit.

Some marshes may be plowed with a team by using wooden shoes on the horses. These shoes are made of two-inch pine, cut round, and two curved pieces of iron, moving freely in the shoe and bolted together over the hoof. If this method is reckoned unsafe a windlass may be placed on the upland across the center of the marsh to be plowed. A whisky barrel makes a good windlass. A miniature marsh railroad is, handy on land where horses cannot be safely driven, to carry manure, tools, plants, etc. It consists of a light car and as much track as is required in sections of about one rod long each and movable, so they can be laid to any part of the marsh.

Open ditches for draining are common, cutting the land into quarter acre sections, but if tile drain is used two rows of celery can be raised in the space taken by the open ditch. The better marsh is drained, the handsomer crops look in time of drouth and the soil can be worked immediately after a rain.

Two and three crops are raised off this soil in one season. Table onions are put in for the early market; early celery is set in June and harvested the last of August, and winter celery is set in September and secured in November. Each crop must be fertilized, as the soil is so porous the manurial properties wash down out of reach of plant roots. Celery is set six feet apart between the rows and about a finger's length apart in the row. Table onions or some early crop is raised between the rows and harvested before the celery is ready to hill. Hilling this celery crop leaves a trench between the rows, along which manure is spread and another row of celery plants set, and by the time the first celery crop is marketed the latter crop is grown and needs the soil for hilling. If the season is favorable another row of plants is set in place of the first celery crop harvested. Many growers have quite a trade in celery plants, shipping the plants for setting far and wide.

The first and last crops are bleached with soil hilled closely to the leaves, but the intermediate crop is bleached with boards held closely to the plants by bent iron hooks. Boards bleach the celery higher to the leaves and in quicker time.

Shippers have adopted a uniform box sawed into proper lengths for different orders as twenty, fifty or 100 dozens, the ends of the boxes being inch stuff and the sides half inch. Celery is trimmed, washed and tied into bunches of a dozen stalks each. This work in summer is done in a shed built over a stream, in winter in celery cellars.

These cellars are made by digging two feet below the surface and boarding up two feet above; then on a center frame six feet high, twelve-foot boards meet and slant to the ground with windows. The cellar is then banked and covered with manure. They are built twenty-four feet wide and fifty, 100 or 200 feet long according as they are required to hold 50,000, 100,000 or 200,000 dozen celery. These are built on upland, as marsh is too damp and cold. When the celery is first put into the cellar it is green, but bleaches in a few weeks. It is packed closely, standing boards every few feet to prevent heating. The object is to keep it growing. The roof boards of these cellars are used in summer for bleaching the second crop.

Another method of storing and bleaching for winter is in trenches two feet deep and wide, packing as closely as the crop will stand.

A hilling plow has been invented on which there

is no patent. It resembles an ordinary shovel plow, except that the sides of the steel plow are straighter, to which sides are attached steel wings hinged to the plow. On the top of each wing is fastened an iron rod meeting on the center of the beam of the plow, by which the cut may be reguated to any desired width.

The first growers of celery in this place never dreamed of using the meadow land, but sought for soft, warm, sandy loam. It was some eighteen years ago that a Hollander named Lendert de Brayn, a gardener, made the experiment. He owned a piece of hard land on South Burdeck street, which ran down into the marsh. Owing to the drouth he could not successfully raise celery, so he made the trial of the marsh land, draining it well to begin with. Success crowned his efforts, and a sure crop came with every season, no matter what the weather. So with onions. Others watched him and followed his example. But, beyond supplying the home demand, there was no sale for the toothsome esculent. In the early fall of 1878 Messrs. Buckhout Bros., grocers and shippers, were selling much of this plant at home, when one day one of the firm, in talking with an Omaha man, asked him if there would be a market for celery. The reply was that small quantities were raised in Omaha, but it was high-priced and not very good. He estimated that Omaha would be a good market for Kalamazoo celery, which was so superior, and gave the Buckhout Bros. the card of Payker & Co. Shipments were made in small quantities at first and rapidly increased in size and frequency. Other points East and West were also supplied and almost at once a trade grew up. John Scaal, Ben Haften, Den Adel, Vandimeder, de Brayn and others, furnished all that was called for. Express messengers on the various roads seeing so much celery going from this village sharpened their trading proclivities and sought markets where they could themselves make a commission, and thus the sale of the esculent was greatly spread. The Messrs. Buckhouts' success, which they took no pains to conceal, induced others here to take a hand, and Mr. J. W. Taylor, of the American Express Company, soon became a large shipper and has ever since remained in the business. So the business grew, each season doubling upon the sales of the former one, and even as the demand increased the supply was equal to the call. Land which had hitherto been valued only for marsh hay or cow pastures, and a good deal not fit for that, was now eagerly sought for and brought undreamed of prices, till now there is not a piece of meadow land in the city or vicinity but has been drained and made into a garden spot, immensely enhanced in price.

The principal firms engaged in producing and shipping their own products here are J.W.Wilson, Holtenhouse & Co., O. M. Allen & Son, Den Adel & Sons, Van Haffen & Sons, Loughborough & Allen, P. C. Davis, J. W. Taylor and others.

The number of those now engaged in the celery trade is estimated at 1,500 to 2,000, and is an immense bonanza to the express companies. On one train alone a carload is shipped daily and sometimes two. The gathering of the celery daily from the different shippers occupies much of the time of the express companies.

[A correspondent sends us the above, which appears to have been taken from the *Detroit Free Press* to which we gladly give the proper credit. It is one of the most interesting papers on celery culture that has come before us for some time, and we have thought few of our readers will object that we have to defer some other shorter pieces in order to give it place.—Ed. G. M.]

IS THE ENGLISH GOOSEBERRY WORTH GROWING?

BY T. BENNETT.

Please allow me to say a few words in favor of the English gooseberry. It appears, from what I have lately read, it came very near being excluded from the American Pomological Society's list of small fruits. To have rejected it would, I think, be a great mistake. It is a most excellent fruit. I only wish to add my experience to some one or two others of your correspondents who not long since spoke in its favor.

Those who in their youth have eaten plenty of good English gooseberries, cannot easily forget them.

We have several indigenous species growing wild in the Northern and Middle States, which proves, I think, the climate of these States at least, is not uncongenial to its growth.

There may be some difficulty in perfecting its fruit, but we have few fruits there is not some difficulty in growing. It flourishes best in a clay soil, or heavy loam, but will grow in much lighter soils under good management. It only needs sufficient shading and good mulching, with at least one good watering when going out of blossom, to yield and ripen its delicious fruit. It will grow under shade better than any other fruit we know, and will do well trained up to the north side of a fence or building. Under proper treatment, it will grow and bear many years.

It is increased by nearly all the known modes of propagation, but the readiest and quickest is by pieces of its own roots. Any old bushes, apparently worthless, may be dug up in the spring, their roots chopped in pieces three or four inches in length, planted in a nursery row in good ground, three or four inches deep, according as the soil is light or heavy; these will grow more in one year than a cutting will in two or three; besides, any one can do this, even the most inexperienced in the art of propagation.

Circumstances must dictate the mode of shading, but I found bast matting to answer very well, and had no more trouble with insects than if they had been covered with mosquito netting.

The best way of mulching is to remove the top soil down to the roots, in a circle of three or four feet in diameter; they will be stripped of course, but must be covered up again with about a quarter of an inch of earth, so as not to let the manure come in contact with the roots; then four or five inches of good rotten manure laid on and well trodden down; then replace the earth on top, level or sloping inwards to catch the water, when good luck sends it. Rake off nicely, and the manure will scarcely be noticed.

The American sorts may be managed the same way, but I prefer the English gooseberry, and have always thought it amply paid for the labor and trouble bestowed upon it.

Chambersburg, Trenton, N. J.

EDITORIAL NOTES.

COLUMBIA GRAPE. — This is a white variety raised by J. T. Clark, of Washington, said to be from the White Frontignac, a foreign grape, crossed with the Catawba. It is said to have been in successful out-door culture in the vicinity of Washington for several years.

EUGENIA GRAPE.—This is a red grape, said to have been raised from seed of the same berry that produced the Columbia.

PLANTING PEAS. — There is a belief common among gardeners that peas planted four inches deep will do better than if set but two inches. But it is probable that the cases where the deep planted peas did better depended for success on some other incident that was overlooked. We do not think that the benefit of deep planting peas is beyond dispute.

POTATO SETS.—Disputes continue as ever before about the relative advantages of large or small potatoes for seed, or of whole or cut potatoes. At the outset it is apparent that a very small potato—the size of a pea for instance—would produce so weak a plant that it would take all summer to get strong enough to make a plant fit to bear tubers. Therefore, the strength of the eye that is to produce the plant must be a matter of some consideration. The good, strong eye will surely make the strongest plant in the shortest space of time; and one good sprout will as surely be better than a dozen poor ones. All this is in favor of a moderately large potato, or at least a potato with strong eyes and cut sets. The soil, manner of treatment and other conditions, however, have often much to do with success. A weak sprout well treated will do better than a strong one badly treated. But the sprout, not the size of the potato, is certainly of some consequence. As soon as it begins to grow the sprout sends out roots of its own. The potato is not of much account. We know one who grows as fine potatoes as any one needs, from sprouts alone.

LIMA BEANS WITHOUT POLES.—It is not always possible or convenient to get poles to have Lima beans run on. Some have recommended that they run over brushwood; but even brushwood is not always to hand. Again, some have proposed that the runners be kept clipped, and the plants then become bushes. But either the bean does not like the treatment—the beans are inconvenient to gather, or some other serious objection occurs. No one seems to continue the makeshift over a year or two, and the poles are again sighed after or sought for. Last year we saw a plan which, so far, seemed as good a substitute as we have heard of. Posts were put at each side of the garden plot, a wire stretched along the top from each, and another near the ground, up and down were strings. The beans on such a trellis were planted only about eighteen inches apart, and gave a magnificent crop. Of course, this is for garden work. Where horse-culture to keep down weeds and stir the soil is essential, the cultivator must work both ways, and then we do not see how there can be any substitute for poles.

SCRAPS AND QUERIES.

BIG FRUITS.—"Excelsior" desires to know "what there is in the big pears or big apples, that the GARDENERS' MONTHLY loves to record their

weight so much. For my part I would sooner have a small Seckel Pear, or a small Lady Apple, than the largest turnipy thing that could be offered me." So probably would anybody,—certainly so would the GARDENERS' MONTHLY. But that is not the question. Would our correspondent select in a basket of Seckel Pears, the smallest and scrubbiest specimen, or one that is large, rosy-cheeked, russetty and luscious? If offered his chance, it would really be "Excelsior" with him. In everything size will always be one of the criterions of excellence, and it should always be. The first principles of economy start here. There is not half the waste in peeling in a bushel of large potatoes, that there is in a bushel of small ones; and there is double the waste in rind and core in a bushel of Lady Apples over a bushel of Baldwins. Of course, size should not be the only consideration in the recommendation of an article, and we do not know that it ever is regarded as the only one. It is simply one great merit, and it seems to us deservedly so.

FUMIGATORS FOR HOT-BEDS.—"E. H.," Clyde, O., asks: "Can you or any of your subscribers inform us through the GARDENERS' MONTHLY, whether there is a fumigator made that can be used in fumigating hot-beds from the outside, and who has them for sale?

[There are fumigators made by having a bellows with a long nozzle, and, midway along the nozzle, a tube to hold tobacco. The point of the nozzle is inserted in a hole in the door, wall, or side of any structure, and the smoke blown in. No doubt an order to any large floral implement firm, would bring you such an one.—Ed. G. M.]

GROWING THE FOREIGN GRAPE.—"Lover of Good Fruit" desires to know how he can grow the European grape. He has tried in the open air, and, though the plant seems to do well for a year or two, mildew generally attacks the plant and the fruit, and they do no good. The European grape seems to require a moister atmosphere than the native grape. Wherever they are grown under glass they do well with a little knowledge of cultural details. The glass covering gives them the atmospheric moisture they desire. Those who are fond of the foreign grape can grow them at no great cost. It is not essential to have heating arrangements—the glass covering is all required.

FORESTRY.

EDITORIAL NOTES.

WILD CHERRY TIMBER.—We are glad to know that Western tree planters are beginning to understand that profitable timber planting is not to be confined to Black Walnut or Catalpa. These are useful enough in their way, but still their field is limited. Robert Douglas tells the *Weekly Press* that there is an increasing demand for Wild Cherry. It is in good demand for furniture, and should there happen to be an over stock for this purpose, it is one of the best possible articles of fire-wood. As there are many things known as "Wild Cherry," it is as well to note that Cerasus serotina is the tree intended.

A NATIONAL FORESTRY LAW.—Senator Miller, of New York, has introduced a bill into the National Legislature by which five men are to be appointed commissioners at a salary of five thousand dollars a year each, to look after the timber lands of the United States. These timber lands are not to be sold hereafter except in blocks of 25,000 acres each, or at least "at any one sale." The President of the United States is authorized to employ "the land and naval forces of the United States to protect these forests." We suppose the taking the list of the killed and wounded in the fearful struggle for the preservation of the forests will so fully occupy the time of the commissioners, that even $5,000 a year will scarcely recompense the self-sacrificing gentlemen who so unwillingly respond to the voice of the people clamoring for these officials.

PROTECTION AGAINST FOREST FIRES.—The Forestry Congress has at length seen the force of the arguments of the GARDENERS' MONTHLY, that those who leave dry brush about to burn are equally culpable with those who by accident or design start the fire. At the recent convention in New York, Judge Higley and Mr. Eggleston maintained this point. Nothing further than these two opinions were offered in the matter.

LARGE DECIDUOUS CYPRESS.—Some of the States are trying to rival one another in regard to the largest specimens of Taxodium distichum for the World's Fair. Trunks eight feet long are set up. North Carolina has one six feet through; but the specimen growing in the Bartram Gardens, near Philadelphia, is larger than this. But we learn that a Florida specimen has appeared that is fourteen feet through! Philadelphia must resign the sceptre to this huge monarch of the Southern forest. One thing may be said, that no contention for the world's admiration could induce Philadelphia to part with its huge cypress. The Quaker city, in the spirit of brotherly love, yielded to the application from New Orleans to let the old Independence Bell go to the Exposition, and felt they were making their greatest sacrifice in letting this precious relic go out of their safe keeping for a short time. But in this cypress they have another treasure which cannot be moved; and this may be some comfort to those who are mourning for the temporary absence of the great bell which first rang in the Independence of the colonies.

RAPIDITY OF FOREST FIRES.—It has been found by observations on some of the forest fires the past season, that the rate of travel under a fair wind is about twenty-five to thirty miles an hour. It would take smart riding on a fast Indian pony to keep ahead of a blaze like that.

WASTE LAND IN ENGLAND.—England is beginning to believe that free trade is not good even for England. The moment there is any manufacturing depression, the population leaves for countries that protect manufactures, instead of remaining on their own land to improve it. Sir John Lubbock recently stated in the English House of Commons that there were between five and six millions of acres of land in England which had not yet been brought into a productive condition. Ireland and Scotland together also had about the same quantity. Free trade helped the manufacturers so long as they were able to compete in the open market of the world; when they could do this no longer, both agriculture and manufacture suffered. He proposes to make forest land of these twelve million acres.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

INTERESTING VEGETABLE FORMS.

BY REV. L. J. TEMPLIN.

To the thoughtful observer almost every vegetable form has something of interest, but to the masses they are generally only weeds or common plants. Even those that have some striking peculiarity soon lose their interest by familiarity. The vegetable kingdom is full of unique forms, many of which, to the common reader, are almost, if not entirely unknown. Some of these, from their form, habits, or productions, are quite curious and interesting. A list of all such as would be strange and curious to 80 per cent. of the people of this country, would be quite a long one, and leave but little room in an ordinary article for description.

A brief note of some little known vegetable forms may not be without interest to some of the younger readers of the GARDENERS' MONTHLY.

The gourd tribe furnishes some interesting species. One of these—the Cucurbita claviformis, grows in the vicinity of Constantinople, and is believed, by the people of that country, to be the real Jonah's gourd. It forms an almost impermeable shade, under which the orientals delight to sit and smoke.

The curious fruit hangs down in long, delicate clubs, somewhat resembling large, overgrown candles. This fruit is prepared for food by scooping out the central portion and filling it with force meat. It is then boiled, when it forms a very palatable dish.

Another member of this family is the squirting cucumber, Momordica Elaterium, which is remarkable for the strange property it has when ripe of throwing its seed contents to a considerable distance on being touched or shaken. As the fruit approaches maturity there is an accumulation of fluid in it till it can contain no more, when, on the least touch or jar, the substance about the stem gives way and the contents are thrown out with force sufficient to carry them several yards, and a

report, as of a popgun, that may be heard at a considerable distance. Persons passing near them at such times sometimes suddenly find themselves bespattered from head to foot by the pulpy contents of these vegetable popguns.

In the valley of the Chagres there grow whole forests of the candle tree. From the stems and branches of these depend the long, cylindrical fruits, of a yellow wax color, that so much resemble huge candles, as to have suggested the popular name. The fruit is from two to four feet long and an inch in diameter. The tree grows to the height of twenty-four feet, and blooms all the year round, but most abundantly during the rainy season; but the principal harvest of the fruit is during the long, dry season. The fruit serves as food for cattle, which, when fed on it and some of the native plants, soon grow quite fat. The meat of cattle fed on this fruit has a peculiar, though not disagreeable, apple-like odor.

Ripening its fruit during the dry season, when vegetation is principally dried up, it becomes a very important production for tropical countries, where great scarcity of stock provender is frequently experienced.

The fruit of another species of the same genus to which this belongs, is used by the Mexicans for human food, under the name of Quantiscilate. A tree grows in Australia known as the Bottle tree, from the resemblance of the trunk of the tree in shape to that of a beer bottle.

This tree, Sterculia rupestris, furnishes a sweet, mucilaginous substance, with which the natives refresh themselves. They obtain it by cutting holes in the trees, which cuts decay, forming a rotten place in the tree. Afterwards by tapping them two or three feet below the old cut it affords a plentiful supply.

A tree known as the Rain tree, Pithecellobium Saman, is found in the dryer parts of South America. This tree grows to the height of sixty feet, and its leaves have the peculiar property of condensing the moisture from the atmosphere. So copious is this condensation that a continual shower falls from the leaves and branches until the surrounding soil is converted into a veritable marsh. Places that would otherwise be barren desert are, by this means, covered with the most luxuriant forests. It is said the British government is introducing this tree into India to counteract the aridity of portions of that country.

Queensland furnishes a shrub that would certainly make a very unpleasant neighbor. It is the stinging tree, a very luxurious, pleasing looking shrub, varying in height from two or three inches to ten or fifteen feet. Though pleasing to the eye it is dangerous to the touch, as the pain it produces is maddening. No mark is left, but for months afterwards the place is tender to the touch in rainy weather, or when wet by washing, or other means. It exhales a peculiar, disagreeable odor, that gives notice of its proximity, and enables the experienced and cautious to avoid contact with it. So excruciating is the pain caused by contact with this plant that a man of ordinary fortitude, when stung will roll on the ground in uncontrollable agony. A horse will, after passing through a grove of these trees, rush with open mouth at anyone who dares approach him. A dog under such circumstances will rush around, whining in a piteous manner, biting and tearing the flesh from the parts affected by the sting.

A recent German publication contains a description of a new electric plant that has been christened Phytolacca electrica, which possesses strongly marked electro-magnetic properties. In breaking a twig the hand receives a shock that resembles the sensation produced by an induction coil. Experiments made on this plant with a small compass showed that the compass was affected by it at the distance of about twenty feet. On a nearer approach the needle vibrated and finally began to revolve quite rapidly. The phenomena was repeated in reverse order on receding from the plant. The energy of the influence varied with the time of day—being strongest at about 2 o'clock p. m., and becoming almost nothing during the night. It was also greatly increased in stormy weather; and when it rains the plant seems to wither. It is said that no birds or insects are ever seen on or about this plant. The soil where it grew contained no magnetic metal like iron, cobalt, or nickel, and it is evident the plant itself possessed this electrical property.

A bush, the fruit of which is called Soap berry, is found in great abundance throughout Alaska. The fruit, when ripe, is a small red berry of a juicy and quinine taste, and is generally biennial. If a quart of these berries be placed in a tub capable of holding a bushel, and well stirred, they will form a suds or froth that will completely fill the tub. The more it is stirred with the hand the thicker it becomes, till it can be cut with a knife. A whole family of the natives will gather around the tub and eat this frothy substance with horn or wooden spoons. The taste for it is doubtless an acquired one, but the article is quite popular. The red color of the berries gives a beautiful pink color to the froth. The froth may be made from the green berries, but it is not so highly flavored, and is white in color. Foreigners mix some of the froth with their wine, sweetening with sugar, when it is claimed to be quite a luxury.

The Vallisneria spiralis, a plant that abounds in the rivers of Southern Europe, deserves a mention here on account of the strange action of the flowers at the time of inflorescence. The pistillate or female flower first appears at the surface of the water in which it grows; there it floats as if in expectation of a companion. Soon the staminate or male flowers borne on long spiral stems begin to rise from the bottom, gradually unrolling their long flower stalks till they also reach the surface. They and the female flowers now float towards each other till they meet and touch; this contact results in the fertilization of the ovules, and immediately they begin to sink again beneath the water, there to perfect and ripen their seeds in safety.

The Melon tree—Carica Papaya—a native of South America, is of interest both for its manner of growth and its usefulness to man. It is a rapidly growing tree, attaining in its fourth year a height of twenty feet; it then enjoys a short maturity and then dies. From its quick growth, broad, umbrella-like shade and rapid decay some have seen in this or some near relative the melon tree of the Prophet Jonah. From the time it attains the height of six feet it produces at all seasons flowers and both green and ripe fruit. The fruit grows around the base of the tree crown as do the nuts of the cocoa palm. When mature it is of a yellow color and has the appearance of belonging to the cucumber family. The fruit grows to a weight of fifteen pounds, is shaped like a melon, and is striped longitudinally like that fruit. Both the green and ripe fruit are used for food; the former as pickles and the latter with salt and pepper or sugar. The seeds have a strong flavor, and are used as a spice. The leaves are used as a substitute for soap, for which it answers the purpose well. They are also used to wrap around tough and stringy meat, which it renders tender and palatable in a short time. The tree is of easy culture, and is extensively raised in tropical parts of both America and Africa. It requires but little care, and produces ripe fruit before it is a year old.

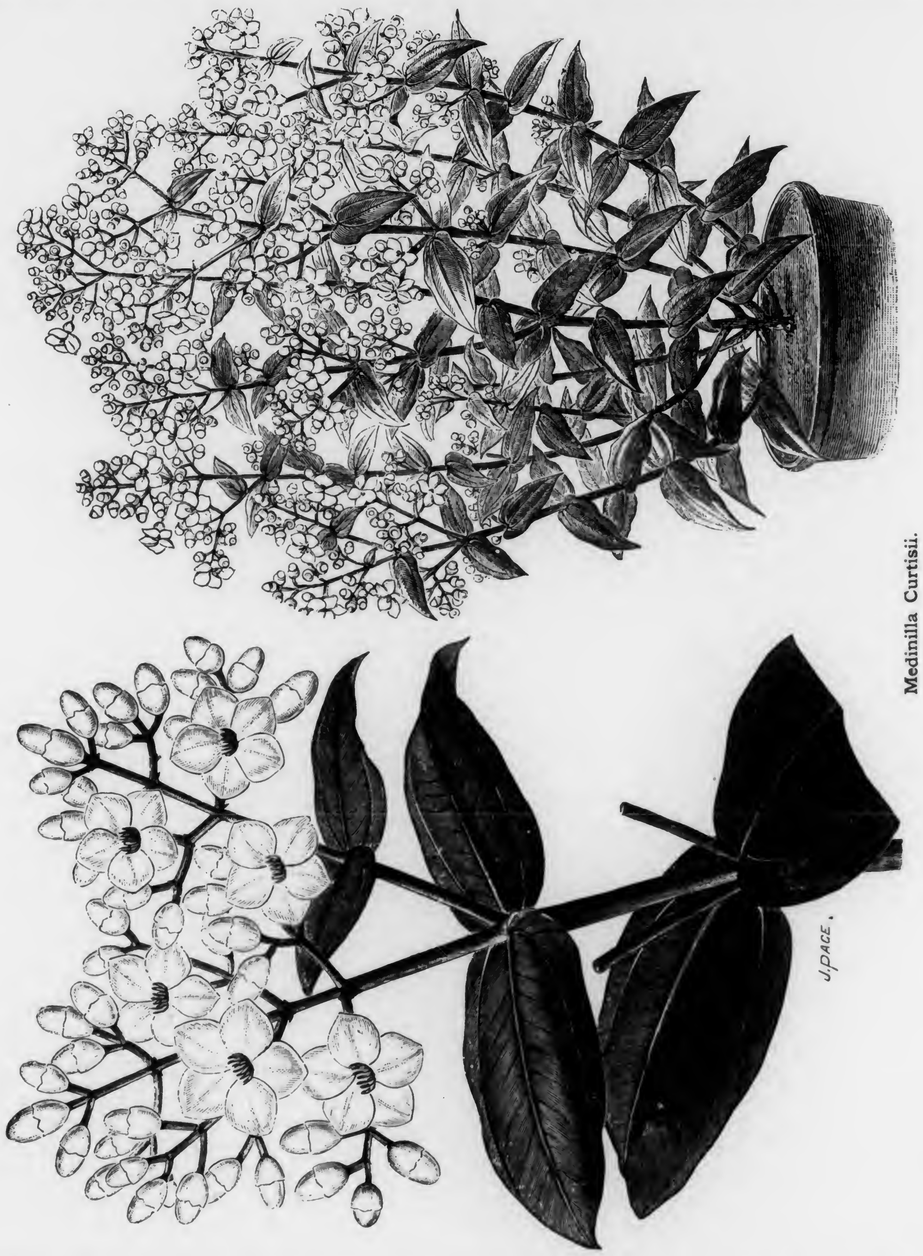
The Mahwa tree—Bassia latifolia—is a product of the Manghyr district, India, and is much resorted to as a source of food for both man and beast. The part eaten is the succulent corolla of the flowers. These fall from the trees in great abundance during the early spring. This is a season of general feasting among the lower animals as well as man. Birds, squirrels and other small animals crowd to the feast during the day, and near night jungle fowls and peacocks come out and dispute their possession with the deer and the bear. As a wholesome, nutritious food the Mahwa flowers possess superior merit. As an article for feeding stock this seems to excel in cheapness; abundance, the supply being unlimited; certain yield, the supply having never been known to fail; nourishing qualities; and good keeping qualities.

But the list of these interesting vegetable productions grows, and we see no termination, so we may as well take our leave of them at this point and leave a long list to be noticed some other time or—never.

EDITORIAL NOTES.

MEDINILLA CURTISII.—Those who love beautiful plants, and to watch them in their behaviour through all their various forms, always have a rich treat in the natural order, Melastomaceæ, to which this beautiful novelty belongs. They are remarkable as being of little service to man, although there are well on to a thousand species known to and named and described by botanists; though perhaps this lack of utility comes from their chief home being among people who are satisfied to know little, and whose chief boast is that they live in climates where about all they have to do in order to live is to lie under palm trees, and eat what falls around them. They want little, hence have little inducement to discover how these plants may minister to human wants of which they know nothing. The plants are wholly tropical or sub-tropical, less than a dozen penetrating the territory of the United States, of which the very pretty Deer Grass, or Meadow Beauty, Rhexia Virginica is a familiar example. Perhaps there might be valuable dye-plants among them. Some of them have succulent berry-like plants among them, and one of them so stains the mouth on eating, that the fact has given the name to the genus from which the whole order has been named—Melastoma; that is Greek for "black mouth." But if, as the poet says, "Beauty is its own excuse for being," these plants are abundantly useful, for some of our most charming conservatory plants are from among this order. They are

usually of regular habits of growth, profuse in flowering, and with flowers that are gay and attractive. Then the foliage of many is particularly attractive, and gives us some of our most valuable leaf plants. The leaves of most of the family are very interesting, from the three-nerved character.



Medinilla Curtisii.

Very few orders have such leaves arranged opposite each other on the stem, though there are others with three leaves arranged alternately; and this character, taken together with peculiar stalked and bent anthers, will almost always tell the young botanist that he has a Melastomaceous plant.

This very pretty new species was introduced by Messrs. Veitch & Son, who furnish us with the following account thereof:

"A beautiful stove flowering shrub introduced by us from Sumatra through Mr. Curtis. It is a bushy plant of rather slender habit with erect shoots and subpendulous branchlets, furnished with ovate-oblong bright green leaves with reddish midribs. The flowers are produced in great numbers in terminal and lateral panicled cymes on flower stalks of a beautiful coral red. Each flower is about half an inch in diameter and has an ivory white, almost undivided calyx and a creamy white corolla of five roundish oblong petals which show to great advantage the central tuft of purple stamens. The neat and compact habit of the plant, the profusion with which its chaste flowers are produced, and which continue in perfection for many weeks in the autumn, render this Medinilla one of the most valuable stove shrubs of recent introduction."

SCRAPS AND QUERIES.

SUDDEN DEVELOPMENTS IN SPECIES.—A distinguished Canadian botanist pleasantly writes: "The GARDENERS' MONTHLY for January has come to hand, and I have looked through it with interest. You must do an immense amount of periodical reading, and correspondence, to get so much news into it. Your article on rapid changes in species reminds me of a procumbent, rooting, Œnothera, which I received from Edinburg in 1871. It has been propagated from the root only (not by seed—Ed. G. M.), and is now undistinguishable from Œ. fruticosa, which is native with us, and which I planted in the same border. I am sorry to see the announcement of the death of my old friend Mr. George Sterling, in whose collection, when I was a student in Edinburg, I often found rare Swiss and other Alpines that could not be obtained elsewhere. So many of my old friends, as Dr. Neill, Dr. Greville, Dr. Balfour, Mr. McNab, of that time, have passed away. We who are left are now entering on a new year; let us work hopefully, ready to complete our time-circle, and prepared, as well as may be, for the higher state."

CURIOUS FACT ABOUT THE VARIEGATION OF FOLIAGE.—Mr. Frank L. Bassett, Hammonton, N. J., notes: "Some time ago I put in some cuttings of Tradescantia zebrina that had half of each leaf green and the other half yellow. In part of them the green was the uppermost color. In the others the yellow was the upper color. When they grew I was somewhat astonished to find that the lateral shoots were not variegated at all, but found that in every case the lateral shoot was colored the same as the lower half of the leaf it grew from. Can you tell me the why of this?"

CHANGE IN THE COLOR OF FLOWER OF VICTORIA REGIA.—A correspondent says: "The changes which the Victoria regia flowers undergo, as indicated by Dr. Richardson's gardener (p. 6) were very well shown in magnificent colored plates published in Moore's *Gardeners' Magazine*, about 1851."

[Also the changes were noted in the letter of Mr. Robert Schumburgk, in the letter which attracted so much attention in the *Gardeners' Chronicle* in 1850; in Mr. Thomas Meehan's account in Downing's *Horticulturist* for 1852; and in the noble work with colored drawings published by John Fiske Allen, of Salem, Mass., in 1853.—Ed. G. M.]

INJURIOUS INSECTS.—"A Subscriber" says: "After reading Mr. A. W. Smith's remarks on diseases of plants, I thought I would ask: Would not an inquiry into the losses and injuries incurred by destructive insects be also an interesting subject of value to the readers of the MONTHLY."

[We need scarcely say that any such contributions will be equally valuable with any on the other topic. In fact, losses to cultivators from disease and from insects are often very closely related to each other.—Ed. G. M.]

THE RELATION OF COLOR TO FLAVOR IN FRUITS AND VEGETABLES.—Mr. Emmett S. Goff, contributes a scientific paper to the *American Naturalist*, to show that there is a relation between color and flavor in fruits and vegetables. Mildness and sweetness accompany light colored flesh to a greater extent than dark colored, he contends. All who know how blanching celery removes bitterness must assent to this proposition, and the list of examples he gives proves that the rule is the same all through.

THE TUBEROUS VINES OF COCHIN CHINA.—As we suspected some time since, these tuberous grapes are closely allied to our own tuberous Vitis incisa, of Texas and the Indian Territory. They are not truly grape vines, but form a section between Ampelopsis and the true grapes.

LITERATURE. TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

BITS OF REMINISCENCES.

BY WM. T. HARDING.

"And when the weary traveler gains
The height of some commanding hill,
His heart revives, if o'er the plains
He sees his home, though distant still."

And thus, in the florid diction of the poet, is described the power of imagination, combined with happy memories, which fondly cling to the past, and remain with us still. And in ideality the writer again sees from "the height of some commanding hill" an antiquated garden, once famous for the number of remarkable topiarian treasures it contained, of holly, box and yew, which our ingenious ancestors had trimmed into many peculiar forms. And the lasting impressions they made upon the plastic mind of the boy, who, as a favor, was often admitted to see them, are as vivid now, after so many long years, as though they were actually still in view. While perhaps the most astonishing examples of that ancient art were two heroic sized topiarian marvels, adroitly shaped into the exact resemblance of Mercury, the winged messenger; and Atlas, with the globe poised on his shoulders; of which not a vestige now remains. And in the rear of these curious living green sculptured bushes, stood an old, heavy timbered greenhouse, glazed with narrow panes of semi-opaque glass, cut into every conceivable form—except square. Apparently, most of the early structures of this kind were glazed with waste window-glass, cut from the rough and wavy outsides of the circular crystal tables, or sheets, as the glass-blowers produced them in those days, when windows were taxed. Growing within this archaic plant-house, were the meagre types or progenitors of some of our highly developed class of flowering plants, so indispensable for summer decoration in the beds and borders about our pleasure grounds now. And, as through the mental vision their comely features are seen again, one feels amazed at the wonderful change which has been gradually taking place since then. In reality, they are floral links which bind the present to the past. And yet, notwithstanding, no conjurer's transformation tricks could ever be more astonishing. or complete, when touched with the enchanter's wand, than Time, the subtle alchemist has performed in the domain of horticulture, within our recollection.

And there are many, whose brows are not yet furrowed, neither are their heads crowned with gray, who practice the "art which doth mend nature; change it rather"—who can remember the poor little posies, which pleased them less than fifty years ago. While old graybeards, whose memories run still further back, will not have forgotten the time when very meek little flowers with even less pretensions, had their day, and were considered "most beautiful things."

"Our rural ancestors with little blessed," possibly experienced as much pleasure in their quaint old gardens, while cultivating or "culling simples" and flowers, long before the advent of the modern grand displays were dreamt of, though happily now so common to us in this our glorious age of flowers.

When looking back at the very brief lists of bedding stuff, which comprised the stock of first-class places "in the days of auld lang syne," we naturally wonder how they made out with so few things for ornamentation, compared with what we now-a-days have at our command. But if the gentle readers will consult the horticultural pages of the past, and examine the pictures which illustrated some of the famous places of the period, they will be equally surprised and delighted with the pleasing, and oftentimes picturesque effects, the liberal use of herbaceous plants gave to the scene. These much neglected flowers, with the aid of old-fashioned annuals, sown in clumps and patches among them, never failed to make a goodly show, and give delight to those who loved them.

To exemplify, without amplifying examples, three species of plants are selected as fair representatives of what were then considered fully up to the regulation standard of perfection; to show how they compare with similar species, in this our year of grace, namely,—Cinerarias, Calceolarias, and Petunias.

Calceolarias, of both shrubby and herbaceous kinds, with mostly puny sulphur colored flowers, a few of which were irregularly spotted with brown

were looked upon as something superb, when but slightly larger than a ripe white grape currant. Since then, they seem to have been gradually increasing in size, and with improved form and more brilliant colors, from the semblance of little fairy pockets—to those of watch fobs for giants. Insignificant as they might appear now, they were nevertheless much admired when they had nothing better of their kind; and then, they grew freely, and flowered profusely.

And there are visions not yet effaced from memory of many an antiquated greenhouse, like the one alluded to, in which used to grow Cinerarias, and Petunias, more remarkable for the lack of that which constitutes floral excellence, according to our advanced ideas of floriculture, than for anything else. And yet, the good folk who grew them considered them elegant and useful greenhouse plants; and no doubt felt just as proud of them as we at present do of the more splendid varieties which have succeeded them.

Of the first named, the poorest kind of star wort found growing in neglected fence corners, or struggling for existence along the dusty country roadsides, was on a par with most kinds of them, in times gone by. But what of that; they were the best they had, and were prized accordingly. And of Petunias, which were formerly regarded as choice and lovely pot plants, very useful for the beautiful show they made in the greenhouse during the winter season; the writer remembers when but five or six varieties were all the kinds in cultivation. Were it possible for the present enthusiastic admirers of pretty flowers to get a glimpse of them at this day, they would be apt to dub them "a shabby lot." And yet, notwithstanding their want of comeliness—as we judge them now—and as it was with the other two mentioned, having no superiors—as each novelty appeared, however poor it might be, it was gladly accepted as something different, if not an improvement, upon its predecessor. And thus, with these acknowledged merits it obtained public favor, and while remaining without a rival, it had the distinguished advantage of being one of the newest, if not the nicest things ever sent out.

They, the amateurs and professionals of that time, good souls! many of whom have not yet gone to "the land o' the leal," could hardly have believed it, though a prophet had predicted the coming of better things, especially among Petunias, that they would live to realize such extraordinary improvements, as have come to pass in these latter days among the flowers. They could not possibly have had any conception of the size and brilliant coloring, which renders them so conspicuous in the greenhouse or garden. And flowers variegated, rayed, blotched, penciled, mottled, fringed, or striped, were then unknown. Neither had the fine double rose, or camellia kinds, then made their appearance: they were reserved for us to admire later on. And with the greatest variety of single, double, and semi-double kinds imaginable, some of which are fragrant, almost every garden in summer is gay with them throughout the land. The few exceptions there may be to so commendable a practice, are much to be regretted; as there cannot be any sunshine in the heart that exhibits no love for flowers.

Watching the progress of horticulture, as the writer has for many years, and ever alert to observe improvements in floriculture, at the same time, he was, notwithstanding his expectations to see "something good," be it said, much surprised at the sight of the remarkable development of one of David Fergusson & Sons' seedling single blotched Petunias, during the past summer, which measured a little over four inches across the flower. And when I inform the younger followers of the most ancient of all earthly occupations, that he who thus writes the chronicles of gardening, as it was, in his youthful days, has a clear recollection of the popular first-class kinds, with their dingy-white, flabby little flowers, of less than an inch in diameter, much more like small Nierembergias, than modern Petunias, the reason will be obvious why he should place upon record such a marvel of evolution.

Mount Holly, N. J.

EDITORIAL NOTES.

MAKING KNOWN THE GARDENERS' MONTHLY.—It may do no harm to remind the many friends of the GARDENERS' MONTHLY, that it is issued at the low subscription price, chiefly that the publisher may have a claim on the friends of the Magazine, to do what they can to make it known among those who are interested in its aims. A purely Horticultural Magazine, unlike one devoted to Agriculture, cannot reach the scattered votaries of the art, by any amount of advertising usual in other businesses. It has to flourish solely on the good will of its friends.

THE LANDSCAPE GARDENER OF FAIRMOUNT PARK.—Public life is anything but pleasant, from the exposure to malice and the many insidious attacks which it entails. Landscape Gardener Miller, of Fairmount Park, has just been through

the ordeal, and knows what it is. Wm. A. Maupay, the son of a well-known and, in his day, honored nurseryman, of Rising Sun, near Philadelphia, was employed in the Park under Mr. Miller, but for some reason or other was discharged. He then brought charges against Mr. Miller, that he had taken or sent plants from the Park, presumably in his own interest. The charges were repeated in every paper—petty and respectable—in the city ; and by those who did not know Maupay or Miller, Mr. Miller was thought to be in a terrible plight. But on investigation it was found that a system of exchanges, in vogue in every public garden in the world, had long ago been authorized here, and as all exchanges had been faithfully recorded on books kept for that purpose, as well as all receipts on account thereof, the Landscape Gardener had simply to produce these books. The whole transactions showed so much in favor of the Park, that, instead of censure, the result was the passage of a resolution unanimously by the Park Commissioners, thanking Mr. Miller for his extremely good work in connection with these exchanges. But thousands will have read of the malicious charges, who will never see the vindication ; but then it is worth remembering that while malice makes enemies, it brings friends also. Hundreds now know of Miller's good work who before had no idea thereof.

Good for Insects.—A correspondent of another paper is puzzled at the answer the Editor gave to her inquiry: What was good for insects? that he could not tell her unless he knew what disease the insects were suffering from? She should tell him that they had eaten more than was good for them.

Col. M. P. Wilder.—It will, we are sure, gratify the numerous friends of Col. Wilder, to know that notwithstanding his advanced years, he presided at the annual meeting of the New England Geneological Society, and made one of his usual brilliant addresses. This is we believe the eighteenth consecutive term of his Presidency.

Charles Downing.—The death of this distinguished pomologist, which occurred on the 19th of January, closes a remarkable era in the history of American horticulture. It is well known to students of social philosophy, that the courses of large bodies in the community are unconsciously directed by a few remarkable men, who come to be in a certain sense leaders and directors of thought without either the leader or the led having the least idea of the current drift of things. In gardening we see this frequently illustrated. The genius and influence of Thomas Andrew Knight, ably seconded a few years later by Lindley, led to the production of a race of thoughtful, practical gardeners in England, the like of which the world has probably never seen. On the continent of Europe, Von Mons, Decaisne, Du Breuil, and others of that stamp, took a special interest in fruit culture ; and for many years the whole world had to look to France and Belgium for most that was worth learning in progressive fruit culture. Landscape gardening, flower culture, orchid collecting, and many other lines of horticultural pleasures, all owe their waves of popularity to the unselfish genius of a few enthusiasts. Gardening never goes down. From early Paradise till now the love exists, and will exist while time endures ; but the peculiar directions the tide take depend on a very few.

The advent of the Downings—Andrew Jackson and Charles—had this special influence here. A. J. Downing was a rare lover of garden taste and garden art, and he had the essential enthusiasm that was catching to all who came into contact with him. If he had lived no country would have been more preeminent in landscape gardening than America. But he died young ; and the young plant with so brilliant a future faded when his spirit fled. To-day, landscape gardening is almost a lost art among us, at least in comparison to what it would have been had the great master lived. The brother Charles' genius tended more to fruit culture. His love for trees and flowers was not less than that of his brother, but fruit was his chosen fancy, and to our mind it was the genius of Charles Downing which led the way for the vast preeminence in fruit culture which America enjoys to-day. Of course he has been ably seconded by Warder, Barry, Wilder, Hovey, and many others, just as in other lines other leaders have been ably seconded in their day ; but the stream that was stricken from the rock was chiefly in response to the rod of Charles Downing.

Who will now tell us of what we want to know of fruits? Who will give the many hours in naming and identifying baskets of fruit from all parts of the world to which he gave so many in the labor of love? Hours of time and piles of money, for that which was not of the slightest value to him, except as might be the knowledge that he was benefiting every one around him. Is there anything in horticulture that makes a man unselfish? The lawyer, the physician, the clergyman even, has a money value on time, and either in the shape of a gratuity or stated fee expects to get cash for services rendered. The merchant especially regards the money value of time ; but men like Charles Downing must work continually, day in and day out, from January to December, seeking only the good of others. This was especially the lot of this good man, and not to work merely, but go cheerfully and uncomplainingly along. Not always, however, is this great sacrifice made without some thought of its cost. It is only a few weeks ago that we had a letter from our good friend on this very topic, which it is yet too sacred with the mark of privacy to use in full. We may say, however, that it told of his early struggles to be useful in the literature of pomology, and of the troubles and disappointments of finding publishers to give to the world his works. Even where he had been successful in this, all that he had received from his huge labors in many cases was a few copies of his own work to give to his friends.

Possibly some one will arise who will follow closely in his steps and continue in the good work just as he would have pursued it ; but the experience of history is against the thought. There will be but one Charles Downing ; and as we lay his remains in the grave, the tears of American pomology everywhere drop over them as for its greatest treasure gone beyond recall.

Charles Darwin.—Lives of this great man will soon come from the English press. One has recently appeared, of which a reviewer in an English daily paper says :

"Darwin was a native of Shrewsbury, and it was eminently fitting that a Shropshire man should communicate a sketch of his life and works to the county Archæological Society, and that the same should be given to the world. The 'Proud Salopians' have indeed something to be proud of in that their county town gave birth to Darwin, and only less fortunate is Staffordshire, for Darwin's grandfather was in a sense a Lichfield man, and he and his family were very intimately associated by marriage with the Wedgwoods. Charles Darwin's father married a daughter of Josiah Wedgwood, the eminent potter ; Darwin himself married his cousin, a daughter of the second Josiah Wedgwood ; and a sister of Darwin also married into the same family. All necessary facts relating to Darwin's family history are clearly set forth in Mr. Woodall's monograph, and we have some original information respecting his schoolboy days, contributed by two of his schoolfellows who survive him. Darwin, who had little taste for the classics, used to say that Euclid, done as an extra subject, was the only bit of real education which he got at Shrewsbury Grammar School. Under the famous Dr. Butler, classics were everything at Shrewsbury, and therefore it was not surprising that Darwin won little distinction there. The Rev. W. A. Leighton says he was reserved and fond of long, solitary rambles ; but another schoolfellow, the Rev. J. Yardley, recollects him as a "cheerful, good-tempered, and communicative" lad, qualities which, as Mr. Woodall remarks, certainly distinguished him in after-life. He subsequently studied at Edinburgh and Cambridge, and took the B.A. and M.A. degrees in the ordinary course."

Rev. James Sprunt.—We note by a brief paragraph in a Baltimore paper that Dr. Sprunt died recently at his home in Duplin county, North Carolina. He was among the first of the correspondents of the Editor of this magazine, and sent to him for examination flowers of a rose that had sported from Safrano ; and with the Editor's encouragement it was propagated, proved permanent, and finally became the well-known "Isabella Sprunt," which to this day holds its own as one of the most popular tea roses. Mr. Sprunt was very fond of gardening, and his home in Kenansville, to judge from his enthusiastic correspondence, must have been a very pleasant place. He was a Scotchman by birth, but settled as a Presbyterian clergyman, at Kenansville. On the breaking out of the rebellion he became chaplain of the 20th North Carolina Infantry. Since the end of the war he was Register of Deeds for Duplin county.

The Agricultural Grasses of the United States. — By Dr. George Vasey. Washington : published by the Department of Agriculture. To the many good deeds of the Department one more has been added in the shape of this book. Efforts were made by a wide distribution of circulars to find out what grasses were in any way identified with agriculture throughout the length and breadth of the land. We have 163 of them here described, and 120 figured in lithographic plates, and all that is known of them placed on record.

The People's Farm and Stock Cyclopedia. —By Waldo F. Brown. Published by Jones Brothers & Co., Cincinnati, Chicago and St. Louis.

The first impression in receiving a book of this kind is that so much has already appeared of this class, that there is no room for more ; but the truth is that many "Farmers' Cyclopedias" are just the kind to make a sensible, practical farmer become disgusted with "book learning." Looking carefully through this book, however, we are free to say that it is not of the mere made-up kind—but is of a thoughtful, discriminative and judicious character, creditable in everyway to the high position to which American agriculture is steadily advancing. The editor and leading contributor tells us that though

he has had many years of experience in farm work, it is but ten years since he wrote his first article for publication. To this, perhaps, may be attributed the very clear, concise, and, yet thoroughly grammatical style in which the work is written. Though the book contains 1215 pages, there is nothing repeated—nothing to tire one. A series of capital indices afford a ready reference to any item one wishes to consult. General farm management is discussed in seventeen chapters, and the live stock department in twenty-two; while in an appendix is given tables of figures relating to farm work.

Looking through the chapters it is remarkable how little one who has had experience in the science and practice of agriculture, will find to criticise unfavorably. When the author tells us that "the first essential to successful fruit growing is common sense," most of us, who have been teachers, know how true this is. The man who merely tries to imitate just what another has done, and then expects success, is always to be pitied. Another excellent piece of advice to would-be farmer-fruit growers is, first to grow for their own family supplies, and from this judge what is best adapted to their soil, or what to their own experience; and again, to look at the prospect of a convenient and growing market for what they know they can successfully grow and profitably ship. Another capital piece of advice to those looking for a location for a farm or garden is, to see who are to be their neighbors. No matter how good the soil, how cheap the land, how well favored in every way by nature the situation may be, avoid it as the serpent, if hide-bound ignorance and stupidity prevail. Suggestions about getting into debt for farms, gardens, and homes in general are just to our mind. The advice of many agricultural papers never to get into debt, always seemed absurd to us. No man starting into life without capital can get well off by his labor without debt, till he is old and grey, if at all. Industry alone does not always bring its rich reward. But in getting into debt, as in getting into fruit growing, "the first essential is common sense." The Cyclopedia helps very well to cultivate this essential in the process.

One mistake, common to all works of this kind, is to give long talks on the best varieties to cultivate. These are continually changing, and a book which might by its solid contents be a text book for generations, becomes out of date in a few years. These should be placed in an appendix or left wholly to nurserymen or seedsmen's catalogues. The advice to never plant a fruit tree over one year old, is also old-fashioned, except as it may refer to the peach. This may do where trees are cheaply dug, with most of the roots left in the nursery, but the mortality in carefully spade-dug trees four, five or six years old, need be no greater than among seedling transplanted trees, and two or three years saved in the time a tree comes into bearing, is a good deal in the mere speck of life given to a human being. The chapter on fencing is scarcely down to date. The author does not like them, because of the annual expense of trimming. But he has the Osage orange in mind. He forgets that since the introduction of barbed wire fences, we do not need strong growing plants like Osage orange. With two or three strands of barbed wire, placed so that plants will grow through them and hold them in place, mere shrubs like Privet, Silverthorn, Berberry, or even plants without spines, and which may never be more than a few feet high, a good and cheap live fence may be had that will never need pruning, unless one is very particular to have things neat and nice at some labor and cost.

But the most unsatisfactory chapter is on Farm Forestry. Only the black locust and soft maple are referred to. The author deprecates many fences; but except for posts and stakes, of what earthly use is the locust, after we get it, and, as for the soft maple, even as firewood, it is not worth kindling, against some other trees. But we must remember that Forestry is as yet an unknown art in our country, notwithstanding the tons of government, state and newspaper articles that have appeared about it, and, hence, we must not expect too much from a work like this.

We have only to repeat that it is a truly excellent, practical work, and will be well worthy of a place as a book of reference in every farmer's and fruit grower's library.

FLORAL MAGAZINES.—Though our Magazine is conceded to cover a wider field than any similar publication in this country, we feel that much of our success is due to the excellent work done by other contemporaries, in special departments of that great occupation which we all love.

Among the particularly useful serials, we may name *Vick's Monthly*, the *Floral Cabinet*, and the *American Garden*, which in their special lines are doing good work—fully equal to our own. In a more limited field, perhaps, we may mention Park's *Floral Gazette* and *Seed-Time and Harvest*, as equally meriting patronage and support.

They all have our best wishes and congratulations, at the evidence they all exhibit of a healthy and prolonged existence.

SCRAPS AND QUERIES.

LANDSCAPE GARDENING WORK.—A correspondent, writing from a town in Massachusetts, wishes to know how to establish himself as a landscape gardener, for which, from education and experience, he believes himself to be well suited. He has advertised repeatedly and failed.

We have often stated that one of the greatest wants of the day in all our large towns and cities is good landscape gardeners. There are hundreds of well-to-do people anxious to employ them, and, for want of finding them, have to endure men who scarcely know one tree from another. Hundreds of thousands of dollars are spent annually by mere graders and contractors for gentlemen desirous of getting good work done, simply because they do not know where to find the proper men to do what they desire.

But there is an art which cannot be taught by an Editor in a magazine, and that is, the art of making one's self known to the community around him. We will, however, tell a true story which will illustrate what we mean, and in its application perhaps some one may profit.

"I understand," said a rather needy-looking individual to the writer of this, many years ago, "that your friend Mr. —— has made a fortune and intends to build himself a fine house. Do you know just where he proposes to locate it?" "Just right over in the middle of that corn field," he was told. Further conversation disclosed that the young man believed he had special talent for an architect, but was wholly unknown in the vicinity. Some months later when the owner of that land was within reach, the poor young man was on hand with a plan of a building just suited as he thought to that location. The owner put him off with the remark that he had his own ideas, and did not want to look at any plan. But he finally did look, and objected to this, that and the other, to all of which the young man paid particular attention. He was finally told that he need take no trouble in the matter, that the owner had his own architectural friends, whom at the proper time he proposed to consult, and who no doubt would work out his ideas to his entire satisfaction. But in less than a few days the young man again appeared with another plan. The owner of the land was at first reluctant to grant another interview, but gave in finally, and was surprised to find how nearly the stranger had caught up the idea of his wants from the casual conversation. Seeing that he had a person of real talent and genius before him, he gave him an order to make a plan. The end of it was that the young stranger got his first job, a $50,000 house, and he finally became one of the most distinguished architects of Philadelphia. This was the beginning of the career of the late Samuel Sloan.

After all, is not this the way of all successful business or professional men, even down to the much abused tree pedlar? They have all to let people know in some way or another that they have just what these people want, or they would starve.

It is no use to write to an Editor to ask where the particular individuals are who require good landscape gardeners; all the Editor can say is that he knows there are profitable engagements for hundreds of them. To find them in each individual case is however an art which, though he can and has in the past successfully practiced, he is incompetent to teach.

PROFITS OF PLANT AND SEED COLLECTING.—A lady in South Carolina sends us the following letter. Though addressed to us in our public capacity as Editor of a Magazine, it is not clear that it was meant for publication; but as a reply may be of service to others as well as the writer, we give it a place here, only suppressing the name and address of the writer:

"EDITOR GARDENERS' MONTHLY: I am emboldened in writing this to you, from an intuitive feeling that it would result in a kindly hearing from you; and, I hope, a pecuniary help to me. I am 'only a woman,' but one reared in the lap of luxury, before and since the war, but now feel it a duty to try to help my husband, if I can, to educate and rear five children; and one avenue which I had hoped would be a means to this end, proves very unsatisfactory to me. I will explain. Our beautiful Southern woods and fields are filled with plants and bulbs, much prized by the citizens of the Northern States; notably a bulb—advertised as Amaryllis Treatæ—but known here as Atamasco Lily. I saw it extensively advertised in a great many catalogues for from 8 cents to 15 cents per bulb, and gathered for the last three seasons thousands of bulbs, and can get no better price, wholesale, than 1 cent, and not always that, per bulb; and I write to ask you if you think if I advertised it in your GARDENERS' MONTHLY it would bring me in any more. I am 'to fame unknown,' and after writing hundreds of letters, I have not yet made the salt that goes in my own bread, much less my children's. The bulbs I have sold, if retailed at cata-

logue prices, would have realized me $375.00, whereas they really brought me in $54.00, giving the florist a margin of $221.00, as his part of the profits. Of course I do not expect or wish to reap all, but if I could have even got half I would have remained quiescent and still continued to try to supply florists alone with them.

What I wish is this, to ascertain price to insert an attractive advertisement for two, three, or four months—whichever you advise—and see if I cannot realize the profits myself. I have thousands of Narcissus, which I see by my floricultural papers is the future's favorite, to dispose of. I am in correspondence with several florists for them, but because the bulbs are larger and finer than those they import, they mistrust the plant altogether. One of the Narcissus, advertised under various names—Daffodill, Hoop Petticoat, Sulphur Trumpet, and we here call them Buttercups, Candlesticks, Cups and Saucers, Shepherd's Pipe &c.—I think is the Narcissus advertised as Bulbocodium at 25 cents per bulb, but cannot be certain until some sent me from the North bloom, and I can compare them. You cannot realize that here in the South we border our vegetable beds with them, to keep them in shape; and when once planted they go on increasing until they encroach to such an extent that we have to plough them up as a nuisance. Of course then you will not wonder at my having 10,000 bulbs to sell, and desiring to realize a handsome profit on them and not allow myself only a beggar's portion. Could you kindly give me any idea of my best plan to throw these on the market, and at what time? I feel I am almost inexcusable for thus transgressing your time, but my excuse is above; knowing by the reputation you have gained, that you are willing to help the struggling, and those anxious to help themselves."

It is a natural mistake by those unacquainted with the nurseryman or seedsman's business, that $221.00 represents the part of the profits in a purchase of $375.00. If he were engaged in this business wholly, and took with one hand $54.00 worth, and received directly $375.00 with the other, it would not be correct; as he would probably have had to take a great deal of trouble and cost to find the customers for the article. But the receipts from the bulbs have to go into the general fund, and against this fund a large number of expenses have to be charged. We know one large firm that spends in advertising, or has spent in one year for advertising, $100,000. This of course includes catalogues, cuts, label printing, and such like. There are store rents, wages, commissions to other dealers, bad debts, and numerous other items which run into the expense account, besides the firm's own many years of experience and time to be paid for; and besides all this, he deals in a perishable article, which if not sold has to be thrown on the rubbish pile, though bought and paid for. The writer of this well remembers seeing a letter written by one friend to another who had been always buying bulbs; it was in 1859: "We are not buying bulbs this year, we want bullets;" and over $1,000 of Dutch bulbs were thrown on the manure heap, from similar failures to sell that season. It is not always that war prevents sale, but some other accident is continually arising. We very much doubt whether at the prices named by our correspondent the buyer would make more than fifteen per cent. on his purchase; which is just about what our correspondent made.

We do not think she would do any better, or even so well, by advertising directly for retail customers in the advertising columns of the GARDENERS' MONTHLY. Advertising is a great art, understood only by those well in business. The hap-hazard advertiser seldom makes it pay.

The best course for our correspondent is to continue in correspondence with leading firms, who may possibly need what she can supply, and she need only offer to supply those things which she can get easily, and thus afford to sell at the price that competitors for her products are willing to pay. In this way she will find out those who want them worst, and those who want them worst will be willing to pay the most. This is the underlying principle in all successful business.

DISEASES OF PLANTS.—Prof. J. C. Arthur, who has made a specialty of the study of the diseases of plants, and who has charge of the New York Experimental Station, at Geneva, New York, kindly writes to say that if any correspondent of the GARDENERS' MONTHLY will send him specimens of diseased plants, he will respond with pleasure in the GARDENERS' MONTHLY so far as he may be able to do so.

MR. A. N. CURTIS, of Sharon, Pa.: "Horticulture loses one of its most liberal and enthusiastic patrons, and Sharon, one of its best citizens, in the death of Mr. Alfred Curtis, which occurred at his home, in this city, on December 28th last.

"Sharon owes much to him for the prestige she enjoyed, as being the leading town in Western Pennsylvania in floriculture. Kind and generous almost to a fault, he endeared himself to all with whom he came in contact, by his many acts of kindness and charity. Possessed of abundant means, he was always on the lookout for new things in the floral world, but his great delight was in Orchids, of which he owned one of the most complete and extensive private collections in the United States. He will be greatly missed, not alone for his many acts of kindness, but the people will miss his merry face and genial smile with which he greeted all. The greenhouses will be kept up as usual under the very careful and efficient management of Mr. Isaac O'Brien, who has had charge of them the last seventeen years.

"ALBERT WILLIAMS."

BOOK ON CULTIVATED PLANTS.—A "subscriber" writes: Would you please inform me in your next issue if there is any work giving the names (Botanical and Common) of all classes and varieties of plants grown in this country? If so, where, and at what price I can get it?"

[The "Hand Book of Plants," by Peter Henderson, will be what you desire.—Ed. G. M.]

LADIES' TRACES OR LADIES' TRESSES.—"F. B. H." writes: "Reading an English work recently, I find it a matter of difference whether our pretty autumn orchid, Spiranthes, should be known as Ladies' traces or a Lady's tresses. As the GARDENERS' MONTHLY takes an interest in these scholarly questions, I thought it might interest you to be directed to the subject. What are ladies' traces at any rate?"

[We have been over this in past times. Our opinion is that "traces" is the original word. "Traces" or "trusses" were cords used by old time ladies and gentlemen about their dress, as "cords," or "laces" would be now. A lady's trace, would be a silken cord.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

MASSACHUSETTS HORTICULTURAL SOCIETY IN NOVEMBER.

BY W. A. MANDA.

The Boston Horticultural Hall was again in its best on the occasion of the Annual Chrysanthemum show, which was pronounced by all the veteran exhibitors as the finest of that kind ever held in Boston, or America. It was really a magnificent sight to see over 630 specimens, some being over 5 feet in diameter, besides 750 vases filled with cut blooms; a nice table of orchids and choice plants; also a collection of native plants, bouquets of flowers, pansies, etc.

The Chrysanthemum contributors were the well-known gentlemen, Dr. Walcott, Mr. E. W. Wood, Hon. M. P. Wilder, Mr. C. M. Atkinson, Mr. Hovey, Norton Bros., Mr. A. F. Fewkes.

Large specimens were shown by Dr. Walcott, Mr. Atkinson, and Mr. Wood. Hon. M. P. Wilder had a collection of fifty dwarf and compact plants which formed a pretty lot. Among the new seedlings the most noticeable was one shown by Dr. Walcott. The form is perfect, of pure white color, and belongs to the large flowering section and was awarded silver medal. Mr. A. Fewkes had also some very good seedlings of merit. After the show most of the plants were sold at auction and a sum of about $650 was received, of which one-fifth comes to the Society, which sum will be added to prizes for the next year's show.

The orchid table was interesting as ever with the marvelous flowers. Mr. Gilmore made a fine display with Saccolabium Blumei majus, Odontoglossum grande, O. Sanderii, Dendrobium formosum giganteum, Lycaste Skinnerii, Calanthe Veitchii, Oncidium Forbesi, O. varicosum, a fine specimen of O. ornithorrhynchum and a very rare variety of pure yellow O. Krameri. Mr. H. E. Hunnewell, a number of plants comprising the beautiful Dendrobium Goldei, Oncidium crispum, O. ornithorrhynchum, Cypripedium Spicerianum, Odontoglossum grande, Lælia anceps, L. albida var. bella and the lovely Cattleya exoniensis, a hybrid between Cattleya Mossiæ and Lælia purpurata. Mr. David Allan, grower to Mr. Pratt, exhibited the rare Cypripedium Fairrieanum, a real gem of its genus, although not so conspicuous as many, yet the lovely color and odd shape compensate for the size. Another noteworthy exhibit was a spathe of Anthurium Andreanum, which measured 7½ inches by 5½ inches, which is not at all com-

mon. The fruit show was a fair one comprising pears, apples, grapes, etc.

Nearly six thousand persons visited the exhibition, a proof that the Boston public fully appreciate the effort of the horticulturists.

Botanic Gardens, Cambridge, Mass., Nov. 25, '84.

[As will be seen by the date this should have reached us in time for our last number, but seems to have been delayed on the road somewhere.—Ed. G. M.]

HINTS TO EXHIBITORS.

BY W.

I enclose an extract from a private letter from Boston, which may interest you. It is written by a flower lover. Is there not a hint for exhibitors therein?

"I wish I could describe to you, so you could realize how charming the flowers (Chrysanthemums) are, the newspaper reports are so cold and meagre. I'm so old fashioned, that I like best the bonny little pompons. The sprawly Japanese varieties, I do not love one bit—not to have and to hold and pet. The Chinese are better, some are almost perfectly round, like a "Dalia"—as the Maine people say; and one pink one with a little pink perfume quite won me.

"But the orchids were a revelation to me—I never saw such beauties, and do not generally care much for them. They seem to be uncanny things—like transformed fairy butterflies or moths. One was evidently a tiger, which had been changed to a moth, and then to a flower; but it had rather a tiger uncertainty about it still, and I was a little suspicious of it.

"And my heart ached for some lovely pansies near the orchids. Can you imagine any human being capable of putting about thirty pansy blooms into a tall, narrow vase! all squeezed together, so that not one could show its little face happily. They did look so sorry and uncomfortable that I made a desperate venture and begged of some one in charge a flat dish of water, and put them to float in it, and then the little faces smiled their thanks."

EDITORIAL NOTES.

A GRAND CHRYSANTHEMUM SHOW.—The Pennsylvania Horticultural Society has decided to have a grand show in Philadelphia next Autumn, which shall continue open four days.

MASS. HORTICULTURAL SOCIETY.—In the annual report of this Society, the committee of arrangements, in reviewing the exhibitions of the year now closing, pronounce them the most successful, so far as the quality, beauty and extent of exhibits are considered, which have taken place for many years, and possibly exceeding any within the society's history. The increase in paid admissions was particularly gratifying, the total being $2815.05, a greater sum than the total for the five years previous to 1881, when the American Pomological Society held its meeting in Boston. The receipts at the annual exhibition in 1884 were about equal to the total of all the large exhibitions in 1883. While a part of this increase may have been due to the extension of the time during which the exhibitions were held, it also indicates that the public is quick to appreciate the efforts to add to the beauty and brilliancy of the exhibitions.

The schedule of prizes for 1885 came up for final action, and it was voted to add to the general rules and regulations a rule that no premium shall be awarded at any exhibition, except those authorized by the society.

We do not feel sure that this is wise, while it is undoubtedly true that a free discretion in the scattering of money everywhere on special premiums, would tend to ruin financially the strongest society in time. There must necessarily be many superior objects of Horticultural interest continually coming up, deserving of reward and commendation, which no care or foresight in arranging a schedule, can provide for. It seems to us that the rule adopted by the Germantown Horticultural Society is a better one. This provides a specific sum each month for the discretionary use of the committee; the unused balance of which goes with the life subscriptions, to the permanent fund.

At the meeting of January 2d, Mr. J. B. Moore, the newly elected President, took the chair. His inaugural address dwelt chiefly on the good work the Society had done; gave a just tribute to the unselfish work of a number of his predecessors, and detailed many of the advantages for future usefulness which the Society now possessed. He particularly spoke of the value of the library of the Society as far greater than the whole cost of membership, to all who love rural life and admire beautiful plants and flowers and noble trees. The library is growing faster than ever before, and the necessity of more room for the accommodation of the many rare and valuable books which it contains was enforced.

Mr. Robert Manning was re-elected Librarian and Secretary, and Mr. Geo. W. Fowle Treasurer.

The appropriations for prizes, viz., for flowers $2,600, fruits $1,500, vegetables $800, and gardens $200: and the appropriations for the library committee, $400; committee on publication and discussion $200; and committee of arrangements $300, previously recommended by the executive committee, were voted by the society.

Charles H. B. Breck, William J. Underwood and John C. Hovey were appointed a committee to prepare a memorial of F. Lyman Winship.

Arthur Blake, of Brookline, was proposed by Hon. Marshall P. Wilder, as a member of the society. John L. Gardner and Miss Annie C. Putnam, both of Boston, were elected members. A motion to appropriate $20 for the deficiency in the subscription for vases for prizes at the rose show was referred to the executive committee; and the meeting adjourned to Saturday, January 10th.

The prizes offered for forced vegetables brought out a grand display.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

This is the proper season to lay down box-edgings. To make them properly, the soil along the line of the edge should be first dug, and then trod very hard and firm, so that it may sink evenly together, or the line will present ugly-looking undulations in time. Rooted plants should be employed; cuttings are sometimes used, but frequently die out in patches; a good edge can rarely be made from them. The plants should be set pretty low down, leaving the plants, when set, one or two inches above the soil, according to their stockiness. Sometimes box edgings are laid around beds formed in grass. When so, a few inches of clear ground should be kept clean between the grass and the box, or the weeds will be so intermixed with the box, after awhile, as to render it a nuisance.

Walks should now have their spring-dressing—the verges cut, and a thin coating of new gravel laid on. Before putting on the new, harrow up the face of the old gravel with a strong iron-toothed rake. Roll well after the new is laid on.

Ornamental hedges judiciously introduced into a small place, add greatly to its interest. No easier method offers whereby to make two acres of garden out of one in the surveyor's draught. The Arbor-vitæ (Chinese and American), Hemlock, Holly, Beech, Hornbeam, Pyrus japonica, Privet and Buckthorn may be applied to this purpose.

Shrubs are not nearly enough employed in planting small places. By a judicious selection a place may be had in a blooming state all the year; and they besides, give it a greater interest by their variety than is obtained by the too frequent error of filling it up with but two or three forest trees of gigantic growth. Plant thickly at first, to give the place a finished appearance, and thin out as they grow older. Masses of shrubs have a fine effect on a small place. The center of such masses should be filled with evergreen shrubs, to prevent a naked appearance in the winter season.

Many things that appear frosted a little at the tops should be severely cut down; it will prevent disappointment in the end. Shoots that are injured in winter—especially in the case of the rose—will often have just sufficient vigor left to enable them to put forth leaves, and sometimes even go so far as to attempt to flower, and then die off suddenly under the first hot sun.

Pruning of roses and other flowering shrubs will be the first operation in order. The "summer" roses, or those which bloom only once in the season, the rule is to thin out the weak shoots and leave the stronger ones, merely shortening their tops. If pruned severely in the usual shortening style, they will not bloom freely. The hybrid perpetual roses, if wanted for early flowering,

should also be served much in the same way; but as their chief value is as fall flowerers, a severe pruning now produces a vigorous growth, bearing large and luxurious blooms. The Tea, China, Bourbon and Noisette roses which flower best on young wood, should be well cut in.

Pæonias, Dicentras, and other hardy herbaceous plants that have been two years in one situation, should be taken up, divided and reset in new soil, if the finest flowers are desired. There is a growing revival of the taste for beautiful herbaceous plants, which the Frenchy fashion of growing a few kinds in masses for mere gaudy display had well nigh annihilated. Herbaceous plants take a little more tying and fixing through the summer, but make up for it by variety and peculiar interest.

Chrysanthemums are now indispensable for autumn decoration of the flower garden. Now is the time to procure a supply. They do well in any rich garden soil that is not too dry. The Lilliputian, or Pompone class is still popular for conservatory or pot culture, but the large-flowering kinds still remain the gems of the open ground.

Whenever it is prudent to work in the half dried ground, hardy annuals may also be sown; the earlier they can be started, the finer they flower. Sometimes, after sowing, cold wet weather ensues, when the seed, if it is started at all, is liable to rot. It is best to save a few seeds in each packet, and in two or three weeks after sowing, go over and scatter in the places where the other portion was sown. Every place where seed is put in should be marked, and with the kind; when the border plants are then set out the annuals will not be disturbed. A change of soil, as we have often said, is beneficial to the flower border. With some kinds of flowers, the Verbena for instance, a new soil is a great luxury, for which they will be very grateful to you. The first two inches of the surface soil of an old pasture, mixed with about a third of the surface soil of an old wood, makes an excellent medium to grow border plants in. Not the mere rotten leaves from a wood, but the dark, black humus in which the roots of the trees, and other rank vegetable roots have already began to run riot among.

COMMUNICATIONS.

A NEW DOUBLE BON SILENE.

BY N. B. STOVER.

Lovers of the rose are fully aware that for fragrance, beauty of color, neatness of bud, free flowering and forcing qualities, the old Bon Silene remains at the head of the many varieties of the Tea rose; but for out-door planting it never has amounted to anything worth mentioning, simply from the fact that a few minutes of sun heat would develop and expand its beautiful buds into flimsy and worthless flowers, resembling the wild rose found on our hills and roadsides; but with all this great defect we never could entertain for a moment the idea of announcing it as worthless, because its good qualities overcome its one bad quality.

At last we are blessed with a great improvement in the shape of a very double Bon Silene, originated by a sport from the old Bon Silene over a year ago in the greenhouse establishment of E. Hippard, in the city of Youngstown, Ohio. He says it retains its quality same as first produced. The flower resembles in shape and thickness of petals, the Sou. de Malmaison; its color and beauty of bud is the same as its parent, with a uniform dark rose color to the center when fully expanded.

Youngstown, O.

CARPET BEDDING AT THE GOVERNMENT GROUNDS, OTTAWA, CAN.

BY N. ROBERTSON.

I send you photos taken from my beds as they appeared on the Government Grounds, Canada, during the past year, which I hope you will find interesting.

A description of them will be necessary, so as to enable you to understand their meaning. In one you will see the representation of a bee-hive and two bees, with the words, *Virtute non verbas*, around its margin. The first is a portion of the crest of our Governor General; and the words his motto, the letters of which are made with Alternantheras; the bee-hive of Silver Thyme. The figures are put in to break up the sameness of the carpet which is of Sedum. The outer border is of Salvia officinalis, a plant which makes a fine contrast on grass and ought to be oftener seen than it is, especially on dry soils, as it will bear trimming without spoiling its appearance. It requires particular treatment to make a nice edging.

In another bed you will see the name, Abercorn, through the centre, the governor's wife being a daughter of the Duke of Abercorn. Above and under you will notice two acorns, their crest being an Oak tree which I could not make and show good results, so I put in the acorns as the nearest representatives of it. The surroundings are, as

of the former, put in to break up and add to the appearance of the bed.

Another has on the background the words "Reign Victoria," which needs no explanation. Below is the Prince's Feather, with his motto on each side, "Ich Dien." The space on the sides is cut up so as to allow filling with different shades of carpet material. Standing beside this is the designer of those beds. Here you will notice also, but too far off in the background to be very distinctly seen, a bed of Cactus. To the right is a border of flowering plants, and on the left rises a bank about ten feet. Above the lower level, on the upper margin of it, is a line of ornamental plants of which only one is seen. This rise runs over two hundred feet. Those plants have a very fine effect as seen from below.

Now, I am not a lover of much of this carpet bedding, but would be far from condemning it altogether; for, when you have many beds to fill, it helps to diversify their appearance greatly, and gives variety to them, which in all cases ought to be a main point of consideration. I always aim at having every bed distinct from the others. I do not mean that I can do so without using the same plants sometimes twice; for where you have forty beds to fill this is no easy matter to do, and select them so that they will show well during the whole summer. Our climate is so short as to not admit of changes once or twice during the season. Those beds are considered difficult to make, and when well done surprise many that such work can be done with plants in such uniformity. For my part I consider it a much easier task than to make one with flowering plants. The sole aim of the planter seems to be to cover up the soil, the effect never thought of. But this is the all-important point. Yet some good ideas may sometimes be gathered from carpet beds. Uniformity and order can be carried so far as to give a stiff appearance; but I think all who make them should have some aim in view before they proceed to plant.

In carpet bedding any one who can draw on paper can just as easily put a design on a bed with his compass and foot rule; but it must be borne in mind that this design will not do to be made on paper without having the dimensions of the bed, and drawing to a scale, so that when you lay out the bed there be no cramping for room, or an over-amount of it. And when your lines are drawn there is little difficulty of following them with your plants. Another thing is, if they should not be just in conformity to the eye, the first trimming will mostly remedy the defects, if not too bad. In carrying out designs I never use a plant I cannot trim. Such as Alternantheras require only side trimming; cutting much on the top of such plants removes the color, and mars the effect of the plant. This new one, Aurea nana, can hardly be over-estimated for both its golden color and neat compact habit of growth. No one should be without it, as it far surpasses the old one in every respect.

There are many plants recommended for this kind of work that I never have been able to use to any purpose, owing principally to their rough untrainable habits. Such are always to be avoided. If you really wish to show the purport of your design, the limited number of plants fit to be used for this purpose properly are so few that it would be my principal objection to this kind of work. So I say, let us have a little of every thing that can be produced with plants. Never condemn any system, though overdone as this certainly is. Give us as much variation in beds or borders as you possibly can. Nature has many subjects that can be used in various ways, but, like every thing else, the mode of presentation has much to do with what may be produced by it.

Supt. Gov't Grounds, Ottawa, Can.

[We quite agree with Mr. Robertson that the crusade against carpet bedding is as extravagant as the abuse of this method of gardening. There is really no more reason why flowers or plants should not be made to represent a carpet, than that a carpet should have flowers worked thereon. The answer might be that true taste requires use as the basis of ornamentation. We are first to get the useful and then make it ornamental. The carpet is useful, and then we ornament it; we cannot so use a flower bed. But it is the lawn and the surroundings that are to be ornamented, and if the carpet bed, by its contrast to the lawn, add to the lawn's attractions, as it undoubtedly often does, it is a legitimate portion of true art in gardening. Even the imitation of letters, words and armorial bearings, pleasant fantasies, undoubtedly do give pleasure to thousands, and there must be something natural and rational beneath a practice which so many human beings love to see.—Ed. G. M.]

EDITORIAL NOTES.

TALL LATE-FLOWERING PÆONIES. — With Pæonies, as with Tulips, we have a taller and later blooming race, having flowers of the most lovely

color imaginable, bold round buds which open out gradually into great semi-double flowers of a rosy crimson color, or with broad guard petals of a delicate salmon-rose tint around a mass of creamy white or sulphur-tinted petals in the center of the flower. That they are fragrant also is another recommendation apart altogether from their showiness. When cut in the bud stage and brought indoors, the flowers of these late Pæonies are most charming; no Cattleya Mendeli could be more pure or more delicate in color, and no painting could well do them justice, albeit that M. Fautin has a lovely group of these identical flowers in the Academy exhibition. Although now and then seen in old-fashioned gardens on warm soils, they are not nearly so common as a sight of their beauty would lead one to expect. Of what species or race comes these tall, late Pæonies? They are quite distinct from the early-blooming or P. officinalis set, and even more beautiful.—*The Garden.*

Lilium Leichtlini, Hook. fil.—A very lovely species from Japan, admirably represented in *Bot. Mag.*, t. 5673. Stem 1½—3 feet high, brownish, clothed with narrow lanceolate leaves, pointing upwards—racemose at the top. Flowers from 1—6 in number; perianth segments 3—4 inches long, clear lemon, copiously spotted with claret-colored well defined spots, sharply reflexed, the flower almost assuming a globular form. The slender stems have a curious habit of running under the surface of the soil, and if you place a bulb in the center of a pot it is quite likely to appear near the side. I find this species also delights in a mixture of peat and leaf soil, my finest specimen being in a damp bed planted in such a compost. It is flowering very freely this season, and the individual blooms are very fine. It is evidently very plentiful in Japan, as it can be secured in quantity large enough to make it much more plentiful than it is; of course the high figure which has up to the present been asked for it has deterred many from securing it.—*Gardeners' Chronicle.*

The Japanese, or Ramanas Rose.—Of all single roses in flower, this is just now the best and the sweetest. It is distinct and beautiful alike in leafage and in blossom. Planted in good deep rich soil, it spreads rapidly, throwing up strong sucker shoots from its underground stems, and these flower freely all the summer months, and the flowers are succeeded by large oblate fruits or hips, quite an inch in diameter, and of a bright glossy lacquer-like red color when ripe. Its deep green leaves, netted like those of Salix reticulata, are much used by our lady friends to wear with the half opened buds of China, Banksian, Tea and other roses, or with the rich deep rosy buds of this Japan rose itself. Cut in the bud state, its flowers open out fresh and fair in water, and possess a singularly rich and piquant attar-like perfume. The snow-white variety is not quite so common, but is, if possible, even more beautiful. I am sorry to hear that when the white variety is obtained, it reverts to the red type sometimes ere it blooms.—*The Garden.*

Iris juncea.—There is no Iris, except perhaps the common Pseudacorus, that has such rich yellow flowers as this rare species, blossoms of which have been sent to us by Mr. Edward Wallace, from the New Plant and Bulb Company's Nursery, at Colchester. The flowers are about the same size as those of the common Flag, but different in form. It grows about the usual height of the Spanish Iris, and the leaves, as the specific name implies, are Rush-like. When sent the flower-spike bore one expanded flower; after this faded another appeared from the spathe valves, and has lasted three days in good condition in a cool room. There are but few flowers in cultivation which possess such a clear rich yellow as that of this Iris.—*The Garden.*

Horticulture as an Element in Progress.—Miss Viola Smith, Summit county, O., remarks: "What can horticulture do towards making happy homes for children? Let us imagine a house built on a plot of bare, plowed ground. Let nothing be planted there, let nothing grow there, except the weeds and briers which naturally spring up. Let a family of children be reared in that house and what will they be? It is almost certain that they will develop one of two phases of character. Either they will live in perpetual discord with their surroundings, hating their desolate abiding-place and improving the first opportunity to escape from it, or they will sink to the level of their circumstances and be content in their degradation. A child which could be patient with such a situation in life, and yet refined in its nature, would be one of those of whom we say 'Not long for this world.' There may have been a few such children, but they never need long graves.

"Now what can horticulture do for such a place? First, it can make grass grow. It can change the rough clods, half-covered with dock and plantain, to a well kept lawn, as green as emerald and almost as smooth as velvet. And who can estimate the difference which that one improvement would have made in the lives and destinies of the children of that household? It can not be estimated. Such an improvement would have compelled others, and they in turn others, and so the circle would have gone on widening."

SCRAPS AND QUERIES.

Coning of Cedar of Lebanon.—Mr. Wm. Fowler, Clifton Park, Baltimore, writes: "I send you by mail two cones of Cedrus Libani. We have two trees here which have borne seed for the first time last year. Will you please inform me if it is common for them to bear seed in this country?"

[Cones have been produced by the trees in Laurel Hill Cemetery, and other places in America, but we have never seen such fine ones as these, quite as large as any we have seen from the Old World.

By the way, it is surprising that this famous and beautiful cedar is so rare in collections. Like most coniferæ it loves protection from frosty winds when young, but when a few years old will take care of itself as well as most trees.—Ed.G.M.]

Grass for Sandy Ground.—A Merchantville, N. J., correspondent says: "I am building a cottage for summer use in Merchantville, N. J.,—a place where lawns do not seem to flourish. In view of the poor soil, its very sandy nature, and the fact that I will have considerable shade, would you recommend me to plant seed of Bermuda grass? A writer in a recent number of your worthy magazine extolled it highly. Where will I be able to purchase seed? Peter Henderson & Co. have none for sale. I do not want to tax your time too heavily; a 'yes' or 'no' on the bottom of this sheet will be greatly appreciated by your correspondent."

[The Bermuda grass is but a poor substitute for the lawn grass of the North. It is recommended for the South, because they seem to have nothing else. Bermuda grass would not be evergreen in New Jersey. We publish our correspondent's note in full, because we think one of the things not yet known is a good lawn grass for sandy ground in the North.—Ed. G. M.]

Greenhouse and House Gardening.

COMMUNICATIONS.

NOTES ON BEGONIAS.

BY MRS. E. BONNER.

I have been a reader of the Gardeners' Monthly for several years past. Have read with much interest the history and introduction of new plants, and especially of Begonias. We are, I might say, enthusiastic plant lovers, and when the bread and butter depend upon their successful cultivation the enthusiasm naturally increases. Our beginning was small, and for our own pleasure, but grew in time to the dignity of "Maple Grove greenhouses." The Begonias, sensible creatures, were very soon attracted to me, and by their winning ways have endeared themselves to me as a class. Such being the case, we have brought together a good collection, and our location seems specially adapted to their growth and propagation. I have experimented with all classes that we have, as regards, seed, leaf, and stem propagation, and find that they are not very choice as to the manner—they only ask for fair play. There have been notices from time to time, in the Gardeners' Monthly, of new varieties of Begonias and other plants, that I have watched for in the leading catalogues, but have not been fortunate enough to find them.

I have longed for an opportunity to know the "whys and wherefores" of this, but was not quite brave enough to "speak in meeting" until the notice in the December number of Begonia florida incomparabilis, by Geo. C. Butz.

Then I determined the world in general and the Gardeners' Monthly in particular, should know of my success in hybridizing that class of Begonias. "Others have I," but will not inflict all at once. I have not seen the Begonia referred to, but I have some fine plants of my own growing, from seeds, that are legitimate children, without doubt, of Begonia Schmidtii and Begonia semper florens

alba. The bloom is white and continuous, like Schmidtii—a "wee bit" larger than Schmidtii—but not quite so large as semperflorens. The leaves are quite as large as those of semperflorens, and more closely veined. The green leaf is modified by both its parents. Plant, much more dense and dwarf than semperflorens, and a better shape and grower than Schmidtii.

They are plants worthy of a place in the blooming class of Begonias—but what can I do with them? I am "too remote" an individual to be the originator of new plants, and I doubt if I could persuade Peter Henderson to give me a good round sum for them, and adopt them as his grand-children. It would be a proud day for me could I see them placed beside his double Abutilon in the catalogues—they are in near proximity in our greenhouses.

I said I had not found any of the plants mentioned in the MONTHLY, but if it first noticed B. Bruante and Goury, I take it back. I have those; and as Mrs. R. B. Edson feelingly remarks in the October number, in regard to Gynura aurantiaca, "I feel it my solemn duty to give them a character." Said character will be sufficiently portrayed when I say that we have not had the conscience to put them in our *Novelty Catalogue*. When florists give such exhibitions of conscience as that, there must be good cause for it.

The plants are alike in growth—long and straggling, with now and then a forlorn-looking bloom upon the tip ends of the stalks. One is described as pink, but it is certainly a very faint tinge; no matter which has the pink bloom, but I really think they alternate. I have not done the forlorn side of their character justice—I am incapable of it, but will take my leave of them for the present.

I can sympathise with Mrs. R. B. Edson in regard to Gynura aurantiaca. The glowing descriptions given of it made me ready to overcome all obstacles in the way of obtaining it. I grew it one year,—and buried it with others of my dead hopes.

I have several other experiences equally as harrowing. Some of my "dead" are still unburied, and some still not quite ready to make "remains" of; among those was to have been a Blue Primrose, of which you may hear more at some future time. *Xenia, Ohio.*

[This chatty letter will be read with much interest by many who love flowers. It is particularly pleasant to know that Mrs. Bonner has been so very successful in establishing herself in business, and it affords a useful lesson to many ladies who are deciding on something to do. But we fancy that all who read her remark, that the enthusiasm in plant culture naturally increases with one's pecuniary dependence thereon, will not subscribe to that sentiment. Facts show that the most successful plant growers are among the amateur classes, who have no further interest in the work than the mere love of gardening, natural to everybody, but which they have wisely cultivated.

Another point, in regard to the introduction of new varieties, and their dissemination through the community, will attract attention. When new varieties can be easily obtained they soon cease to have any great commercial value. When there is a probability that a striking novelty will continue to be novel and striking for several years, the commercial man will take hold of it. It takes at least two or three years to work up a good trade for anything of this kind. Where new forms are easily produced, and new and perhaps better things may be introduced before one gets hardly started with the other, the florist cannot afford to take the risk.—Ed. G. M.]

WILLIAM FRANCIS BENNETT ROSE.

BY WALTER W. COLES.

Probably no rose was ever better known to the public before it was sent out, than the new crimson Tea, "William F. Bennett," known as the "Bennett Rose." Having heard so much of it, and being a rose grower myself, I made a visit to Mr. Evans' place to see this celebrated novelty. I am very favorably impressed with it, and I feel satisfied that it is all that is claimed for it. Mr. Evans very kindly took me through the whole of his houses; which certainly constitute a very fine range. The first one entered was the propagating house, which was very complete; and nothing is propagated there but the new "Bennett Rose;" part of the house being filled with nice young plants, in two and three-inch pots, ready to be sent out March 15th. The next house was also filled with healthy young stock in two and three-inch pots. Another house which contained young plants planted on benches last fall, showed remarkably strong growth and freedom of bloom. In the last house were the old plants received from England; they were very strong, and showed thousands of buds. The plant is a very strong grower, its foliage is large and bright; and one of these beautiful buds with a long stem is sure to be appreciated by all. Its color is much like the celebrated Jacqueminot, but its size and shape are like a good Niphetos; its fragrance is unsurpassed by any other Tea rose; in fact it far excels the beautiful La France. This rose will certainly fill a long felt want, and will take the place of the Jacqueminot. *Claymont, Del.*

CANNA IRIDIFLORA EHEMANNI.

BY D. S. HEFFRON.

In the October number of the GARDENERS' MONTHLY, Mrs. R. B. Edson has an article under the heading of "Summer Notes." The writer does not find fault with the article, but especially commends that portion of it referring to duplicate names, to the careful attention of such as grow plants for sale. There can be no justifiable apology for the frequent examples of such mistakes.(?) After I had flowered the really fine Canna Iridiflora, Ehemanni, under the two parts of the name, I wrote a firm of florists that I thought would be likely to know, and inquired if the two were not one and the same. By due course of mail the following answer was received, "Ehemanni is Iridiflora, or, correctly, Iridiflora is Ehemanni." The writer seems to claim, without stating it, that Ehemanni was the original name. Now, recalling the custom of many growers in Europe to follow the name of the plant by their own, to designate that they are the originators, I have ventured to "guess" that the originator of this superb Canna bears the name Ehemann, and that he named it Iridiflora. When it was catalogued by the grower or some one else, it was under the form of the name that first appears in this card above. If my supposed explanation of the two names for the same Canna is not correct, will some one of the readers of your valuable journal, who knows the original name and by whom the plant was originated, set me right? When I am in pursuit of information, I am quite willing to have the error involved in a "guess" pointed out.

NOTE.—If my explanation is correct, or is shown to be wrong, who will pay back to innocent buyers what they have invested in duplicate plants?

Washington Heights, Ill.

[Florists in good standing cannot be too particular about accuracy in the names of plants. Nothing hurts the reputation more than mistakes in this particular. With the best intentions, however, mistakes cannot always be helped, nor can the injury be helped that is sure to follow to the one who makes it.—Ed. G. M.]

NOTES ON NEW PLANTS.

BY M. H. LESTER.

Several years ago, when I first commenced to take the MONTHLY, I never read the advertisements; now, they are the first part I look over, to see if there be anything new. We get all novelties, whether plants or seeds, likely to do well here. I got seed of Impatiens Sultani when it was first advertised in London. It is the best new thing we have found in a long time. I have one plant now that was out all summer, in a 7-inch pot, covered with bloom. Tops taken off about three weeks ago, are now in thumbs, with four and five flowers on each. Tops of Ginura aurantiaca, taken off in the fall, look real pretty now in 3 and 4-inch pots, but it is coarse and weedy looking planted out. The best three flowering plants here, at this time, are, Centropogon Lucianus, Delechampia Rœsliana rosea, and Meyenia erecta. In climbing plants we have nothing comes near to Ipomœa Horsfallii.

Some one going through one of our houses a day or so ago, asked me what "Solanum" something was? Well, it was Luculia gratissima, and the more I look at it, the more it does look like some Solanum. I don't think I care so much about Luculia gratissima as I did. [You will when it flowers freely.—Ed. G. M.]

Jasmineum gracillimum does not come up to my expectations. Along with some of the newer varieties of Rex Begonias received last season from London, I got two flowering varieties, namely, Amabilis and Ascotensis, highly recommended as winter bloomers. I have several good healthy plants of each in 5-inch pots, but I don't think I shall ever know, by them, when winter has arrived over the water, for as yet, they don't look as if they ever would bloom.

Parties often inquire of me the reason their Dendrobiums never appear to grow so well as when they put them to rest. I have not much time for correspondence, and it might be as good a time as any for your correspondent, Epiphyte, if he could spare the time, or some one else that can put it in words better than I, to explain this. Circumstances don't admit of getting them just right all the time myself. The time for rest is the season we have most rain here; consequently more moisture in the atmosphere. And besides, I have to rest them amongst growing plants. I know some amateurs who get them to perfection, and no one puts a hand to them but themselves.

Gardener to Prof. Richardson, New Orleans.

THE CARNATION DISEASE.

BY CHARLES HENDERSON.

I may be repeating something already said in the MONTHLY about this matter, but it is of such importance that I think most of your readers interested will excuse it. I think we have demonstrated that the cause of the Carnation disease, and, in fact, of most of the other diseases of plants is, first, from lessened vigor in the variety, first caused by treatment contrary to what the nature of the plant demands. To begin with, the Carnation for the past twenty-five years has been forced for winter flowering in almost every section of the country, and nearly in all cases by the same process of keeping a temperature at night, averaging, from November to April, at least 55°, with perhaps 15° more during the day. Cuttings are taken off from the forced plants, put into a propagating house, often at a high temperature, and when rooted are grown along at the same temperature at which the plants that are forced for flowers are grown, until they are planted out in the open ground in May, where the temperature outside is nearly as high as that they have been enduring under glass. Now when we consider that the Carnation is nearly a hardy plant, demanding for its best growth a period of rest in winter, the wonder is that it has not rebelled long ago against such bad treatment; but the complaints are now so general that it is evident that unless some means are used to avert the trouble, it will soon be the exception to find a healthy stock of Carnations in winter. Some kinds seem to succumb sooner than others. La Purite was one of the first to give out, but there is hardly now a variety that has been grown for six years, but in some locality or another is failing. There are two ways in which the trouble may be prevented, the first of which we have been practising for a number of years with complete success with every variety except La Purite, and even that has much improved. Our plan is to take the cuttings off during November and December. They get rooted enough to fill two-inch pots by about this date (February 1st), when they are knocked out of the pots and the balls packed close in shallow flats, holding one hundred or so, and they are then put either into cold houses or the ordinary cold frames, and covered up with straw mats so as to keep them from being severely frozen. Kept in this way, they can be planted out just as soon as the ground is dry enough in the Spring, usually about April 1st. The other plan, which we tried for the first time last winter, is to heel away our stock plants in cold frames, and take the cuttings from these any time from January to March. The object in both cases is the same; to rest the plants, as their nature demands. Mr. John Murchie covers the whole ground, we think, when he says, "Quit striking your plants from plants that have been forced." Now, if it be true that the Carnation disease is a consequence of uninterrupted "forcing" from year to year, I think we need not look further to find the reason of many of the other ills that plant life is heir to. The "sickness" among Violets is so general now, that it is rare to find a healthy stock. They, too, like the Carnation, have been forced for a generation, and though at not quite so high a temperature as the Carnation, yet certainly at a higher temperature in winter than they would be in their natural habitat. If this is the cause, the remedy is obviously the same as in the Carnation—give the stock from which you propagate a rest in winter. That debility in vegetable life invites parasitical germs cannot be doubted. All experienced propagators know that excessive cutting of a new plant for stock, not only renders the original plant itself liable to parasitical attacks, but the weakness follows into the progeny for years.

We have several cases in point this season. The new Heliotropes, Swanley Giant and King of Night, are both affected with black rust, while in over twenty other varieties in our stock not a sign of it is present. "Black Rust," so termed, aflects many species of plants, but is best known as affecting Verbenas and Heliotropes. When examined by a powerful microscope it is found to be caused by a lobster-like insect, which rarely attacks plants in health. In fact we have proved again and again that when plants such as Verbenas and Heliotropes have become pot-bound the insect attacks them, while those shifted at the proper time and stood alongside of them have been completely exempt from its ravages. But to return to Carnations. You, Mr. Editor, are probably correct in saying that we can not combat with the disease when its attacks are made in the forcing benches. If, however, the debilitated state invites fungus there may be a temporary remedy in using lime water, made by using about half a pound of lump lime to each gallon of water and putting it on clear, when the soil is dry enough to require water. The best Rose growers in this vicinity use lime water in the same way whenever there are indications by paleness of the leaves that this insidious parasite may be sapping the roots. Another parasite of the Carnation that attacks the shoots is what, for want of a better name, has been called the "Carnation Twitter." The indication of its presence is a twisting or curling of the leaves, and on examination of plants in that state it can be seen with the naked eye. It is a quick-moving insect, like the point of a cambric needle, and about the 20th part of an inch in length. In its different stages is green or black in color. Whenever any of the Dianthus tribe is attacked by this insect they rarely recover. So far there seems to be no remedy for it, as it burrows down in the heart of the shoots, getting out of the reach of anything that might destroy it. It however does not seem to be always invited by debility of the plant. I remember several years ago when we used to grow the hardy garden Carnations largely for summer flowers, that it once struck into a batch of nearly 20,000 plants that had stood unprotected in the open ground all winter. Its action was peculiar. Beginning seemingly with one plant it radiated sometimes to a diameter of 20 feet in patches all over the bed, rendering utterly useless all that it attacked. The only consolation is that it seems to come only at long intervals. *Jersey City Heights, N. J.*

GAS TAR.

BY N. ROBERTSON.

Comment is not necessary to show the bad results of using gas tar on heating pipes. So many instances have been recorded in horticultural works, of its injurious effects on plants, that no reader will fall into the error of using it.

But I have experienced the ill effects of it in another way which plainly demonstrates its detrimental properties. Three years ago I had a greenhouse built; and in a novel position. It was on the top of a substantial shed; but circumstances were such that no other place was available. This shed was on the lower level of eighteen feet from where I had to put it; its roof coming to the level of my other houses, with which I wanted to connect it. This roof was what is called a flat one, covered with galvanized iron. On this it was built. Knowing that it would be difficult to heat with the space cold below, I had first a good coating of tar and sand put over the roof of the shed, so as to make it perfectly close, and then six inches of well-packed concrete. Knowing the bad results arising from tar, I was extremely careful that every portion should be close, but as soon as the heating commenced its smell became strong, doing considerable damage. I was in a dilemma, as bad almost as if the pipes had been covered with tar. To tear up the floor at that season of the year, with the house full of plants, and no other place to put them in, the other houses being taxed already to the fullest extent, was out of the the question. The floor seemed so close that one would think no gas could escape. However, I gave it another cover of cement, made as thin as could be, so that it would run into any cracks that might exist. This gave me partial relief, so that the bad effects were much reduced, and in the end disappeared entirely. I send you this statement as a warning to all that may construct greenhouses, never to use gas tar in any connection whatever with them. *Supt. Govt. Grounds, Ottawa, Can.*

EDITORIAL NOTES.

IMPROVING GARDEN FLOWERS.— Few florists know how much may be made by persistent and intelligent attempts to improve garden flowers. Mr. Rupp undertook the Chinese Primrose some years ago. So successful has he been, that his sales of seeds annually, at first but a few dollars, now go into the many hundreds. Of course he judiciously advertises as well as improves.

CYPRIPEDIUM GRANDE.—Messrs. Veitch, Chelsea, London, continue in the good work of raising hybrid orchids, and are lucky enough in producing some kinds that are quite as distinct and remarkable as species discovered in their native tropical homes. The one now figured is one of the latest. They furnish us with the following account of it:

"A hybrid of exceptional merit raised by our foreman, Mr. Seden, from C. Roezlii and C. caudatum, the latter being the pollen parent. It is the most robust Cypripedium known; its sword-shaped leaves attain a length of from 24 to 30 inches, and are of a bright glossy green; the scape is robust in proportion, exceeding a yard in height, and is many-flowered. The flowers are 6 inches across the sepals from tip to tip. The dorsal sepal is yellowish white traversed with yellowish green veins; the lower sepal is similar with paler veins. The petals are ribbon-like, more than a foot long, quite pendulous, pale crimson except the broader basilar portion, which is yellowish veined with green. The lip is large and prominent, greenish yellow above, whitish beneath, the infolded lobes whitish spotted with crimson around the base; the staminode is pale yellow slightly

flushed with crimson below, and with its upper edge fringed with blackish crimson hairs.

Cypripedium grande.

"Professor Reichenbach, in the *Gardeners' Chronicle*, vol. xv. (1881), p. 462, remarks of this plant, that 'there are few hybrids which have given me so much pleasure as this, since I expect it must develop by and by into an even more superb thing, justifying its name.'"

Heating and Glazing at Rœhrer Brothers, Lancaster, Pa.—Those who love to study progress in floriculture would find themselves well repaid by a call on Rœhrer Brothers, florists, Lancaster, Pennsylvania. They own twelve acres of ground in the suburbs of this flourishing city, which they secured a few years ago for $12,000. It fronts on the old turnpike, which, before the days of steam, was the grand highway for wagons between Philadelphia and the West. They are market growers, and the first block of houses were built chiefly for advancing vegetables, and were heated by flues. As the demand for flowers grew, another block followed, heated by hot water; and since the advent of the great taste for cut flowers, another block has been erected which has been heated by steam. They afford a good opportunity to test the various systems. The steam-heated buildings were working to entire satisfaction. These cover 5,000 feet of ground surface, and are heated by a boiler made by a Reading firm, and guaranteed by the makers to keep the houses warm under a low external temperature, with no care of the fires between 9 in the evening and 5 in the morning. It hardly does this, however; but then we could hardly expect to leave even a hot-water furnace, or one with the old-fashioned flues, with so little attention in very severe weather. The steam-heated houses have however a great advantage in a system of glazing in use by the owners, and for which they have applied for a patent. In this plan the glass is simply placed on the sash bar, the panes edge to edge, and the whole held in place by a thin metal slip, galvanized, which, like a cap, completely covers the outer portion of the sash bar, on which it is screwed down and thus firmly holds the glass in place, while it wholly excludes moisture and prevents the escape of the warm internal air. Should a pane of glass get accidentally broken, the metal cap is unscrewed, the whole column of glass pushed up from the bottom, and another placed at the end. A screw or some similar contrivance prevents the long column of glass from slipping. Under the old systems of putting the panes of glass edge to edge, and the whole then puttied, breakage was the great objection. It was almost impossible to fit another in. It is much easier to fit in a new pane under this new plan than under any old method. But a great advantage of this system is that it takes away one of the great sources of broken glass—the freezing of water between the laps. Under the old system of lapping glass, especially if the panes were wide or the glass of poor quality, the breakage from this cause is usually heavy in most establishments, especially if there is much jar from wind or other causes while the temperature is low. Another great advantage is that there is much less escape of heat than under lapped glass. The edges are not quite so close that one might not now and then draw a hair through; but it is very rare that wider spaces and a much greater loss of heat do not follow from the usual lapping plan. But the greatest advantage of all is the superior light which this system gives. Dust and slime soon collects under the ordinary greenhouse lap, and where this is the case there might as well be no glass. A quarter of inch lap in every six inches of sash is equal to three inches of blank surface—say four per cent. of actual waste. Some may think this of little account, but those who have had experience in growing winter flowers in a new house where the light was unobstructed will know how important every ray is to success. In some cases the roughness of edge in a closely fitted pane might lead to a little drip sometimes; but if this should occur a little white lead in sliding up the glasses would probably be effectual.

The question of glazing greenhouses will yet be an important one. The steam heating subject has overridden this so far, but is scarcely of more consequence to complete success. The Horticultural Hall at New Orleans has been glazed on the Rendle Patent plan, which also provides for the glass being placed edge to edge, instead of being overlapped. Any suggestions in this direction will be welcomed by our readers.

In these houses rose culture is a great success. The plants are renewed every three years. Lettuce and radishes are grown between the roses, but are drawn out before the roses get far into growth. About January carnations and some other things are taken completely out and their places occupied by young bedding plants which are sold off in market in spring.

Dinner-Table Decoration.—What may be called a golden rule in dinner-table decoration is, always to have some distinct feature in each arrangement. If a design is worked out in colored leaves, let them be used in such quantities and in such a way as to give color and effect to the whole. If cut flowers are used for filling glasses or epergnes, let them form the prominent feature of the arrangement, and sometimes let plants, either large or small, supply color, grace, and beauty. One of the most popular ways of decorating a dinner table is, to use rather tall trumpet-

shaped glasses with projecting arms, which support smaller cups or trumpets around the central one, and a rather wide dish-like base. The dish should be arranged with the largest flowers, using as much as possible those that show to the best advantage when the eye looks down upon them. Allamandas, Dipladenias, upright-growing Roses, Chrysanthemums, and Camellias are all good for the purpose, with a few sprays of some light material to take off the stiffness; but it is not necessary to make the base particularly light when you have a tier of smaller glasses above. The arrangement of these should always be extremely light and graceful; nothing approaching stiffness or heaviness is allowable. The flowers used should be of the lightest description, such as Bouvardias, Jasmines, Begonias, Plumbagos, Ericas, and Epacrises, with a few grasses intermixed, and a light fringe of Adiantum or Pteris serrulata, to which might be added a few sprays of Fuchsias, Begonia fuchsioides, or any other small pendulous flowers. When the above plan is well carried out there is nothing to surpass it for elegance and beauty. It is also a style that finds great favor with the judges at many of the best exhibitions.

A very pretty effect can also be obtained by using small plants or Ferns placed in glass, silver, or china ornaments, and dotted about at regular intervals on the table, with one large plant and a few smaller ones tastefully arranged in a bowl for the centre. There are numbers of plants suitable for the purpose. I will mention a few that I have found particularly so: Pandanus Veitchii, P. utilis, and P. elegantissimus, Dracænas terminalis, ignea, and congesta, Crotons angustifolius and Chelsonii, Asparagus plumosus nanus, Cyperus alternifolius and variegatus (struck from tops), Grevillea robusta, and Caladium argyrites. Aralias Veitchii and gracilis are often used on account of their lightness, but one great objection to them is the dull color of their leaves, which do not look well by artificial light. The best Aralia I know for the purpose is A. leptophylla, which has the same style of growth as A. Veitchii, with leaves of a fresh green color.—*Journal of Horticulture.*

SCRAPS AND QUERIES.

GAS TAR IN GREENHOUSES.—A correspondent from Dundas, Ontario, writes: "I had a small conservatory built last summer, 16x20, and heated by a Hitchings boiler through coils of four-inch cast pipes. I had a lot of fine monthly roses heated through the summer for winter blooming, and which was put in the conservatory early in the fall along with an assortment of other flowers. They all grew nicely until the heating with the boiler was started, then every thing went back; the leaves withered on the roses, the buds on the other flowers dropped off, and I got quite discouraged until I read your article in the January number of the GARDENERS' MONTHLY AND HORTICULTURIST. I had coated the heating pipes with gas tar. I am now in a quandary whether to let the flowers freeze or creosote them, (which you say is the only alternative,) until I can burn the tar off the pipes in the summer. I have only taken your magazine the past year; had I taken it sooner I might have saved myself the disappointment and annoyance of trying to grow flowers in the poisonous atmosphere of gas tar.

[It will do good service if anything effective can be discovered which will destroy the creosote element, without taking down the pipes. If any one learn, we shall be glad to know.—Ed. G. M.]

RAVAGES OF THE ROSE BUG.—A correspondent writes, under date of January 13th: "Enclosed please find two specimens of what we call rose bugs and grub. We have lost a number of roses, especially Niphetos, by this so-called grub which is produced by the rose bug. Having thrown out all our Niphetos which were entirely eaten, they have now taken to a house of Perle des Jardins and we fear that in a short time we will lose all of them. We have been gathering the bugs every day for the past month, but there are so many grubs in the ground that it seems to be of no use. We have now taken to overhauling all the ground, but are bound to miss a great many. I have tried Paris green, tobacco water, hellebore, lime, soapsuds, and nothing seems to kill them except boiling or burning them."

[We could not make out from the crushed larvæ sent, whether this was really the common rose-bug of our gardens, or of the more dangerous Aranigus Fulleri. However, whatever will destroy one, should be good against the other, and we shall be glad to have notes from those who have had success.—Ed. G. M.]

THE DOUBLE OXALIS.—Mr. J. H. Slocombe, New Haven, Conn., says: "Is it not Oxalis cernua plena, instead of lutea plena, your correspondent inquired about? This variety is large and very double. Was imported from Germany into New Haven about eight years ago."

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

THE INSECT PROBLEM,

BY T. BENNETT.

I see by the last issue of the MONTHLY an inquiry on the subject of insect depredations. Allow me a few words on this important subject. Is it not time to take decisive steps in this matter and form some systematic plan for insect destruction? I believe the time has come to effect this.

We have been long acquainted with the natural history of most of the insects injurious to vegetation, but here the matter drops, and but little practical has been achieved. This insect question has become one of the most important to the whole country, far more important than most people are aware of. For many years insects have increased at an alarming rate. At the present ratio of increase, if there be not some means devised to put a stop to their progress, the farmer, gardener and nurseryman may well be apprehensive for the future. Birds and parasites do a great deal, but much more than this must be done if we would successfully grapple with the enemy.

United States officials have told us: "The aggregate annual loss to the nation from insect depredations amounts to hundreds of millions, and there is a loud call for relief." But they do not tell us the way to relief. Now, therefore, let the question be agitated, and we have reason to expect some valuable results.

I have been informed that the U. S. Congress has in contemplation a bill calculated to give every man a chance to try and find out a proper remedy for totally subduing, or at least keeping under control, the different species of destructive insects, by awarding a suitable premium for the most reliable plans. This appears to be a move in the right direction, and will undoubtedly bring into the field all the skill and experience of which the country is capable; it may save a great deal of useless expenditure, for is it not apparent that practice, the result of patient trials, many experiments, and much research, is what we shall have to depend upon?

Botany, entomology and chemistry, though most excellent sciences in themselves, do not teach how to destroy insects. These however may help very much, if the knowledge they can impart be utilized properly for that purpose, but without practical experience which leads to a sort of intuitive knowledge of the subject, they are of but little use. Geometry may help a good mechanic, but it will never make one.

It is apparent, if such a law be carried out fully, it will give an impetus to renewed exertion—help to set the wheels of invention in motion—and with other wise and beneficent laws, tend to promote the general welfare.

A paper, too, issued by the Department of Agriculture, a sort of bulletin, weekly or semi-monthly, giving the new schemes and devices in the warfare against insects, and everything worthy of note, would strengthen the relations that should exist between the governing power and the people. They would see that by such work by the government, the real welfare of the whole community was being practically as well as theoretically cared for. *Chambersburg, Trenton, N. J.*

A HUNDRED BUSHELS OF APPLES FROM ONE TREE.

BY N. S. PLATT.

In the GARDENERS' MONTHLY for December some one mentions the case of an apple tree bearing forty-three bushels of apples in one year, and asks for record of larger yield.

I would call to your notice a tree in this town belonging to Mr. Delos Hotchkiss, which is believed to be the largest apple tree in New England. In 1880 when I measured it it had eight large branches, each of them as large as an ordinary full-grown apple tree. The spread of these branches is six rods; five of them in one year have borne eighty-five bushels of fruit, since Mr. Hotchkiss owned the place; and his predecessor had over one hundred bushels in one year from the same five branches, which had a habit of bearing one year and the other three the next.

Cheshire, Conn.

[Our correspondent has our best thanks for the information. If we are not mistaken in the identity of Mr. Hotchkiss, he is a descendant of a warm friend of the unfortunate Louis of France, who dared

to accompany the king to the guillotine. His last gift on earth was to this friend—his watch, which is still treasured as one of the richest possessions of the family. It is a remarkable piece of mechanism; a small figure with a hammer in his hand strikes the hour on a little bell, when it is desirable to know the hour in the dark. It is an extremely ingenious contrivance for a watch. Two such treasures in members of one family; the one a natural wonder as in this apple tree, the other of art as in this watch, is a fact of rare occurrence. —Ed. G. M.]

GRAPE ROT.

BY MR. DENYS ZIRNGIEBEL.

In the October number of the GARDENERS' MONTHLY, inquiries are made about the cause of grape rot, so prevalent in the Western States. It is probably caused by planting on deep soils and want of drainage, especially when grown on level lands. At the time of ripening considerable warmth at the roots is required to ripen the grapes, which cannot be expected when the roots have reached the cold sub-soil. The rot very seldom makes its appearance the first few years after planting, while the roots are near the surface. On the thin soils of New England we are never troubled with it.

It was quite common once, in glass graperies, under the name of "shanking," but experience has taught gardeners the necessity of well drained borders. The disease is not constant and will vary with the seasons. On the whole, the success of grape growing depends mostly on the location of vineyards. Side hills and declivities, providing for natural drainage, are more adapted to it than level lands where drainage is difficult. In the latter case, throwing up the land in ridges four to five feet high and eight to ten feet apart, might obviate the trouble somewhat. The growth would not be so luxuriant, but the crop would be surer to raise and be of better quality. *Needham, Mass.*

ENGLISH GOOSEBERRY.

BY H.

In the February number of your useful journal I observed an article headed, "Is the English Gooseberry worth growing?" I used to grow this fruit quite successfully in Central New York, but could not do it without mulching and shading. The plants would not always suffer exposed to the full sun, but the fruit would scald and frequently mildew and thus be worthless. In my experience the best results were obtained by planting where the sun would shine upon the plants until about ten in the morning, and then they required the shade of a fence, house, barn, or trees. I grew only smooth sorts.

Three years ago I received a new strain of the English gooseberry,—at least new to me,—that pleases me very much. It is large, oval, yellowish-green when fully ripe, and of fine flavor. And what is most commendable in it is, that it has neither shown mildew on fruit nor foliage exposed to the full rays of the sun, in Illinois, all day, without any mulch. I cannot see why it is not as healthy and hardy as the Downing, while the fruit is twice as large.

The friend who sent it to me is a successful amateur grower of fruits and flowers, but does not know the origin of his English gooseberry; but says it may be a sport from some old English sort that he used to grow, or a seedling that originated in his grounds. He has fruited it for eight or ten years without mildew, but I think he generally mulches to keep the weeds down. It has fruited with me two years, bearing perfect fruit, simply by frequent hoeing. There are no plants for sale.

Washington Heights, Ill.

EMPIRE STATE GRAPE.

BY JOHN CHARLTON.

Like Mr. Geo. W. Campbell, I have my doubts as to the ascribed parentage of this fine new, white variety. I must confess, that I am at a loss to understand how Hartford Prolific and Clinton could produce such a remarkable result as is here obtained. I have thought well of this variety, from its first appearance. I told Mr. Ricketts at the time he first exhibited it at the American Pomological Society's meeting here in Rochester, that to my mind it was a very likely candidate for public favor; and which now, after considerable further experience and acquaintance with it, I am prepared to say that I believe there is more commercial value in it to the growers for market purposes than there is in the whole of Mr. Ricketts' other seedlings combined; the awards of the committees of the American Pomological Society to the contrary notwithstanding. Its merits are, as I have observed them to be, as follows: The vine is a free grower, with dark colored healthy foliage, producing firm, short-jointed wood, which does not fail to ripen as thoroughly or better than the Concord, and so far has not exhibited the slightest tendency to mildew. It bears very handsome bunches, of a greenish-white color, covered with a fine bloom. Berries round and very persistent, medium in size, and of excellent refreshing quality. Taking all things into consideration, I regard it as the best white grape so far offered to the public. Of much better quality than either Pocklington or Niagara, with not the faintest trace of foxiness in its composition. Its strong constitution, fine showy delicate bunches, coupled with its good quality, speak volumes for its success. Like Mr. Campbell, I also regard it as a desirable new variety of more than passing excellence.

Rochester, N. Y.

ZINC LABELS.

BY J. R. S.

I send you specimens of a method of using zinc labels for roses, herbaceous plants, &c. I have used them (zinc labels) for more than twenty years with great satisfaction on trees, and recently have tried them for roses, &c. by inserting the ends in the ground, but they are very liable to get covered up or displaced when cultivating the plants. This plan obviates that difficulty and makes a cheap and permanent label. The rods for support are of ¼-inch iron 18 inches long, so tough that the loops can be turned cold. Having a supply of that kind of rods on hand, I make them myself and can complete fifty of them in an afternoon ready to receive the labels, which are obtained from the tinman at the cost of one dollar per hundred. These are made 5¼ inches long by 1⅛ inches wide, giving room for the name of the plant in large letters and leaving space for remarks on the class, color, date of planting, &c.

The stoutest fence wire would probably do instead of the ¼-inch rods I use. *Rahway, N. J.*

[The zinc labels are written on by an ordinary lead pencil. At first it is barely traced by the eye, but gets blacker with age, and is indelible. In orchard trees we have found the eye of the label to wear out very easily when in contact with the copper wire. If a brass eyelet could be punched into the zinc eye-hole, it would be an additional advantage we believe to the excellent hint of our correspondent.—Ed. G. M.]

INTRODUCTION OF NEW VEGETABLES.

BY FILIX.

Why would not the Kerguelen-Land Cabbage (Pringlea antiscorbutica) be a valuable plant to introduce into Alaska? It is noteworthy that Heard's Island, which is even more remote and bleak than Kerguelen or Desolation Island itself, has a species of wild cabbage, valued by mariners and seal-catchers as an article of food. Fuegia, where the excellent bishop of the Falkland Islands is conducting a successful and very interesting missionary work, ought to be a good place for the Pringlea to thrive in, and in no country is such a plant more needed.

If I remember rightly, Mr. Darwin found in Southern Patagonia a very palatable wild celery. Now, since our cultivated celery is said to be the offspring or development of a wild plant which is scarcely palatable, why should not the wild Patagonian plant be capable of a desirable improvement in cultivation? Novelties in the market-garden are always in order.

I lately had an interview with a gentleman who has visited Patagonia. He states that no country in the world promises better for cattle-ranching than the northern two-thirds of that region. The climate is good, the country grassy and well watered, with good harbors, and few wild animals, except Indians. *Merchantville, N. J.*

EDITORIAL NOTES.

AMERICAN APPLE TRADE.—A correspondent of the London *Gardening World* regrets that England will have to spend ten million dollars in American apples this winter, but finds some consolation in the thought that the apples will be brought to England in English vessels, and thus this part of the money will remain in England, and the profits also are included in these millions, which the English will also retain. Just how much of the ten millions will come to the United States is not stated.

CORNER IN ORANGES.—Not a commercial "corner" exactly, but a safe corner in a cold room, is the latest project in Florida. Now they have to be sent to market when ready, and sold at any price that can be got for them. It is proposed to form a company and get an immense building, kept cool, so that the oranges need not be marketed till the several gluts are over.

CELERY, EARLY ARLINGTON.—This is spoken well of by Boston people. It is a short, stocky variety, of similar appearance to the well-known Boston Market.

SCRAPS AND QUERIES.

THE CUT-LEAVED ENGLISH BLACKBERRY.—A Lansing, Leavenworth county, Kan., correspondent writes: "I am a grower of small fruit and vegetables for market. I obtained through a friend (who has traveled extensively in the far West) a blackberry plant from the Sierra Nevada mountain slope in Nevada, in the autumn of 1871; planted it and have tested it thoroughly, and find it to be 'the hardiest' I ever knew; a very heavy bearer, fruit large and luscious, inclined to a long or thimble shape, ripening with me from July 10 to August 15, and a few berries up into September. We call it the Nevada blackberry."

[Here we have again our old friend the cut-leaved English blackberry; not, as we have said, a native of this continent, but an introduction from the Old World. There will be no excuse for naming it over again—Nevada blackberry or anything else. The native blackberry of the Pacific coast is Rubus ursinus, and of little account as a fruit.

It is however very interesting to know that this old English variety is doing so well in the Western portions of the new world.—Ed. G. M.]

VINE CULTURE IN AMERICA.—A New England correspondent says: "Born amongst the vineyards of the French part of Switzerland I have always taken an interest in vine culture. I did start even here once with that view, but found soon that, in the hard climate of New England, I could not compete with the low prices of Western grape growers, so had to give it up; but have still kept an interest in it, and have great hopes of its success, especially in California, which has a great future before it."

FORESTRY.

COMMUNICATIONS.

FACTS IN FORESTRY.

BY AVERY P. SLADE.

Zebulon Pratt of Bridgewater, purchased twenty-five acres of wornout land in North Middleborough for $25 per acre, and in the spring of 1863 had it set to white pines, at an expense of about $200. The plants were from six to eighteen inches high and were set in rows ten feet apart each way. In December, 1883, they were from twelve to sixteen inches in diameter and in a thrifty condition, and Mr. Pratt has been awarded premiums by the Plymouth County Agricultural Society for the best plantation of pines. The lot is now taxed for $800, which is based on a two thirds valuation, and, as towns are inclined to favor such experiments, it is fair to presume that this is not too high a valuation, and that the cash value of the lot is $1200. The cost of the land ($225), setting the trees ($195) and taxes for twenty years, aggregate $540, which, in twenty years, at compound interest at five per cent., amounts to $1431, or $231 more than its supposed value. But Mr. Pratt says he did not embark in this enterprise for profit, but to benefit the inhabitants of the village, and that he might be remembered pleasantly by those coming after him. Had he planted with a sole view to profit he would have put the trees 10 feet by 6, instead of 10 by 10, thus having 726 trees to the acre, instead of 425. It is pretty generally conceded that pines 6 feet by 10 will make a growth of more value than at a greater distance apart.

At 10 feet by 10, there is a greater growth of branches, which are of little value, and less growth of body than when planted nearer. Now, if 425 trees to the acre brings the value of the lot up to $1200, 726 trees to the acre would be worth the round sum of $2000, which is $272 more than the whole outlay would have amounted to at six per cent. compound interest for twenty years. This plantation, Mr. Slade reported from personal observation, covers a sterile ridge of sand and gravelly loam. What surprised him most was the number and extent of the branches; beginning near the ground, each tree seemed to vie with its neighbor in throwing them out horizontally in every direction, from five to fifteen feet in length, interlocking so as to form in many places an absolutely impenetrable jungle. The conviction was irresistible that had the trees been properly trimmed from time to time (and the wood would have paid the expense), the present value would have been at least one-third more. There were said to be 10,775 trees, and could the whole growth have been thrown into the trunks, they would at a moderate estimate have been worth 25 cents each, or a total of $2694, exclusive of the land.

J. D. G. Williams of Raynham, set a piece of pine in 1850, the value of the land being $10 per acre and the cost of setting $5 per acre, and after twenty-five years' growth the standing wood was sold for $150 per acre, affording a very large profit, and leaving the land in good condition to set again. Mr. Williams also set a piece of pine in 1841 on land of the same value, the cost of setting being $6 per acre. This is, perhaps, one of the earliest experiments of the kind ever made in Bristol county. The trees apparently came to maturity in 1876, having made no perceptible growth since that time. They were set in rows, from six to nine feet apart and from four to six feet in the rows. The lot has an eastern exposure and the trees on the eastern side were evidently set for a wind break, being not more than four feet apart. They are large, with many strong angular branches, resembling in shape an oak as much as a pine, and contain as much timber as those less exposed, but it is not so valuable. In 1876 an experienced lumberman estimated this wood at seventy-five cords to the acre, two-thirds being suitable for box boards, worth at the mill, three miles distant, six dollars per cord. No arithmetic is required to show this to have been a profitable investment.

The late Richard Sampson, of Middleborough, set pine trees on a piece of land too poor to cultivate, which are now thirty-one years old, and estimated to be worth $150 per acre, and would probably bring a much higher figure. This piece contains about ten acres, and is remarkably thrifty, and its growth during the next ten years will greatly increase its value.

The above instances of rapid growth and profitable results are not exceptional, but are selected because their history could be given more in detail than others. Plantations of pines from five to thirty years old may be found in Norton, Mansfield, Taunton, Raynham, Easton, Randolph, Middleborough and the Bridgewaters, all giving promise of remunerative results.

[We take this from an excellent paper on Forestry in New England, read before the Massachusetts Horticultural Society.—Ed. G. M.]

EDITORIAL NOTES.

ROOT FUNGUS.—The note which we recently gave detailing the work of the landscape gardener of Fairmount Park in destroying root fungus on shrubs and trees by the use of sulphur has had a wide circulation since it appeared in our paper. It appears that similar attention is being given to these dangerous fungous parasites in the Old World, and sulphur is used also as a remedy. The chestnut trees in the neighborhood of Nantes, France, have suffered severely, many being wholly destroyed. By laying bare the roots, and sprinkling with sulphur before refilling the earth, the trouble has been arrested.

PROFESSOR OF FORESTRY IN MICHIGAN.—Ann Arbor University has established a chair of forestry in connection with its other branches of education.

PROFITABLE TIMBER TREES.—When people are told to plant timber trees, they are seldom told what kinds of trees are most profitable, yet this is a most important part of forest culture. In our own country few people know what kind of wood is in demand and what therefore to plant with a view to profit. They know that Black walnut is valuable for coffins and cabinet-ware generally, the locust for fence posts, the catalpa for posts and railway carriage building; but little more. The Agricultural Department has undertaken a good work at the New Orleans Exhibition by making a national exhibit of wood-work, which will have a great educational value. Philadelphia is famous for its wood-working industries, and has contributed freely to the government displays. So far as our Forestry Congresses and Conventions are concerned, we learn little but that, unless more trees are planted the water courses will dry up, and the country become a howling wilderness—the story varied perhaps by the number of feet of lumber left to cut, or the great advantages of free trade. The practical information, that would enable one to plant with a view to profit within a few years, is seldom forthcoming.

In the Old World information of this character is widely diffused by forestry associations. In a paper issued in Scotland we learn of the forest products of that region, that apple is used to make imitation rosewood and walnut, and for clubs, bowls, wainscotting. Ash — largely by wheelwrights and agricultural implement makers. Mountain ash—for light crates and machinery, especially in potteries. Beech—chairs, tools, and for

spinning, weaving and similar machinery. Birch—shoe-pegs, veneering and furniture. Cherry—same purposes as apple. Elder—for imitation of bone, box and ebony, and for printing blocks. Elm—very great demand for railway carriage building, and for almost anything where no paint is desirable. Hazel—hoops for barrels. Holly—mathematical instrument makers. Hornbeam—millwrights, especially for the cogs of wheels. Horse-chestnut—packing boxes and mould patterns for castings. Laburnum—fancy turnery. Larch—boat building, mining, fencing, pumps, and such like. Linden—railway carriages, carving, shoemakers' and saddlers' work, packing boxes. Maple (Acer campestre)—machinery, furniture, musical instruments—high priced and profitable. Oak—ship building, and for every purpose where extreme strength is desirable. Scotch Fir—everything where our pine wood would come into use. It is the "deal" of their commercial trade.

Natural History and Science.

COMMUNICATIONS.

SOIL ANALYSIS.

BY RUSTICUS.

In this article I wish to speak of soil analysis as helpful in determining what manures to apply to land. It is a plain proposition. If by analysis we can discover the constituents of soil, we can equally as readily detect the absent elements. Primary soil always contains potash, phosphorus, soda, magnesia, lime, sulphur, chlorine, silica, manganese, iron; hence, tests indicate which are not present, and the appropriate fertilizers can be applied. Science must be brought to bear in agriculture, or the highest success cannot be attained. I desire to treat of soil analysis, to give it the credit I think it merits. I by no means claim for it that it answers every purpose, so far as the ascertainment of the exact character of an extended area of land is concerned, though an approximation may be arrived at. Ground varies so in its composition, considered in its entirety. Says Prof. Robert Peter, chemist of the State College of Kentucky, "It has been found by experience, that the direct chemical analysis of the soil and of the fertilizer is the most economical method of ascertaining the deficiencies of the one and the composition of the other; and, as this is necessarily somewhat costly, but can be more economically done by the community than by the individual, many governments in Europe and States in our own country have provided for this public want by the establishment of so-called agricultural stations. The State of Kentucky, by providing for an extensive chemical analysis of her soils, has rendered great service to the future of her agriculture." Soil analysis, though certainly showing all the elements which are present, yet may prove deficient in determining the fertility of the land, from the soil elements being in insoluble combinations. Says Morris Copeland, "Each man's farming may be much improved by his clearly comprehending the principles of analysis, and the mutual relations between crops, manures and soils, the general physical character of different fields. He may then apply to each soil that kind of manure which is richest in the elements in which the soil in question is deficient; he will not waste it on a soil compounded in the same proportions as itself."

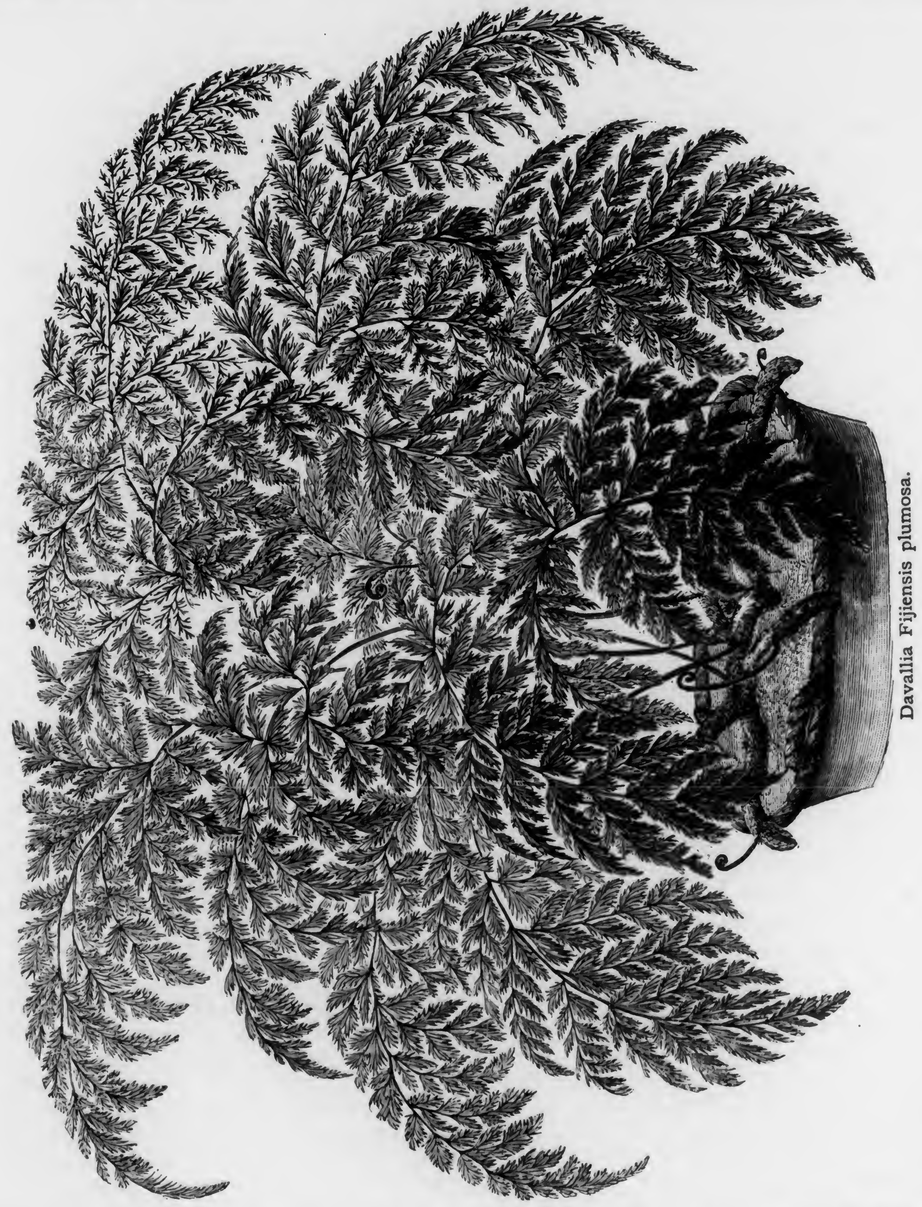
Soil tillage, to be worth anything, necessitates thorough familiarity with the constituents of land. How can we proceed intelligently otherwise? Says Dr. Lawes, the world-noted agricultural experimenter, "It is quite true that all investigations concerning the composition of the soil are attended with great difficulties, but when once the fact is clearly recognized, that our advance in the path of scientific agriculture lies in a more complete knowledge of what is taking place in our soils, some, at all events, will be found who will not be deterred from such investigations because of the difficulties to be encountered in their pursuit." Dr. I. R. Nichols asserts, "Difficult and delicate as is the labor of determining the fertilizing principles in soil, it is quite within the power of the chemist to correctly determine their amount. If chemistry had no more difficult service to perform, we would not complain." Here is a very important feature in soil analysis. Suppose you are trying to raise a particular crop on certain land, and find it does not come well, though you expend a great amount of care upon it. Perhaps your neighbor is producing the same crop remuneratively, and on ground, to all appearances similar to your own. You are greatly puzzled. You apply various fertilizers, without any appreciable effect. In your despair you resolve, as a last resort, to send a sample of your soil to some analyist. He detects just what is lacking, or what is too abundant in your land for the special crop you wish to raise. This is no fancy picture of mine. I can give exactly such cases. On Brae's Island, South Carolina, and on much of the South Atlantic coast there was a black soil that would not advantageously produce cotton. This was a serious matter, for cotton was styled "King." A sample was forwarded to the Agricultural Department at Washington for analysis. A qualitative examination was made, revealing the presence of protosulphate of iron, very probably sufficient cause for the poor cotton returns. A complete quantitative analysis was made. The preliminary gave moisture, 4.75; organic matter, 14.24; inorganic matter, 81.01. Specific gravity, 1.14. Aqueous extract of soil had an acid reaction. A stratum of soil 1 foot deep, extending over one acre, would contain 3,100,055 lbs; remembering the specific gravity, 1.14, a cubic foot of it therefore weighed 71.42 lbs. The 3,100,055 lbs. of the soil was found capable of yielding materials immediately available for plant food as follows: Silicia, 1,331 lbs.; peroxide iron, .651; phosphoric acid, .440; potash, 2,077; magnesia, 1,305; lime, 1.023; organic matter, 6.201. "The presence of protosulphate iron, and probably free sulphuric acid," rendered the soil unfit for cotton. The analysis showed the necessity of removing the salt of iron and of neutralizing the free sulphuric acid, which could be effected by copious applications of lime. It taught also the necessity for under-drainage. I am thus minute, Mr. Editor, to show the keen searchings of soil analysis. The sorghum plots at the Department of Agriculture, Washington, were found lacking in something necessary for the perfect production of sorghum. The soil revealed, on analysis, a very small content of lime, and an almost entire absence of chlorine. Its need was sulphate of lime (land plaster or gypsum). I ask, was not this soil analysis valuable? Was it not the very best thing to be done? Here was a portion of the Department experimental farm set apart for the cultivation of sorghum. It was found to be ill adapted for the purpose. Was it to be given up for that purpose? Science wisely said, "No, not if tests can unfold the trouble." Again, the dark, steel-gray limestone of New Jersey was positively injurious to vegetation. What was to be done? Leave the ground vacant? That would have been folly. Something was radically at fault. Science again steps to the front and solves the problem. Analysis showed its deleterious effects were due to the high percentage of magnesia. The remedy was found. The influence of the magnesia was to be overcome. Prof. Hilgard affirms that the power of analysis is almost illimitable; it stops almost at nothing. Soil analysis began in this country about the year 1860. W. H. Farquhar reports a signal triumph in 1867. A quantity of soil from an old sedge field, long thrown out from cultivation, very sterile, was analyzed, with an equal quantity of very rich soil. The usual constituents, clay, silex, etc., were present in both, also lime. But the phosphates were almost entirely wanting in the poor soil, while present fully in the rich. The remedy was at once known. Bone was applied, and for nearly twenty years good crops of wheat, corn, clover and timothy were produced. Says Farquhar, "It appears to me a matter of positive certainty, whatever chemistry may have done or failed to do for agriculture in the past, that a wide field is open for it in the future. Great improvements are yet to be effected by its agency; but, in order to realize them, the chemist must become a practical farmer, and the farmer be an intelligent chemist." With your permission, Mr. Editor, I will continue the subject.

Lexington, Ky.

EDITORIAL NOTES.

DAVALLIA FIJIENSIS PLUMOSA.—We give here an illustration of a class of ferns known as the hare's-foot, or the rabbit's-foot fern, from the thick creeping rhizomes, which push over the surface, often hanging over the sides, and from which spring the fronds, as the folial organs in ferns are called. It is an interesting illustration of the close relationship between parts often wholly beneath the ground, and the stems of plants or the trunks of trees. If these rhizomes were to become erect we should have a tree fern; and really there is no other difference between a tree fern and this Davallia except the erect stems are bent and lie on the surface of the ground. In many ferns the stems grow wholly under the ground, and then they are what are known as the creeping-rooted ferns. We may see the analogy between the

rhizome and many other parts of plants although with separate names. A potato has no great difference from a rhizome. It is shorter and thicker, that is about all. We call it a tuber but it is essentially a rhizome. The thread-like "root" of the couch-grass, or the stolon of a strawberry is essentially the same, and even the flower stalk of a strawberry is but the stolon or runner which has become erect and floriferous, instead of lying on the ground and making a new plant instead of a crop of flowers at the apex.



Davallia Fijiensis plumosa.

Studies such as these give a great deal of interest to the cultivation of flowers, besides the mere beauty involved. So far in this respect the beautiful fern figured, introduced by Mr. Bull, has great beauty. It is certainly one of the most charming in the whole range of evergreen stove ferns—one of the most lovely forms of a remarkably ornamental family. It has creeping whitey-brown rhizomes, and from these spring up at intervals the gracefully-drooping, feathery, plumose fronds, which grow on stalks a foot or more in length, supporting a broad triangular lamina, which curves over in the most elegant manner. It will be a grand subject for all decorative purposes, especially useful for cutting, and a noble fern for exhibition specimens. As its name implies, it is a native of the Fiji Islands. In speaking of the best novelties, the *Gardeners' Chronicle* (Jan. 7th, 1882, page 10), remarks: "The Davallia Fijiensis plumosa is, perhaps, one of the most elegant of all known ferns." It has received a first-class certificate from the Floral Committee of the Royal Horticultural Society.

SCRAPS AND QUERIES.

CAN PLANTS SLEEP FOR CENTURIES?—A Canadian botanist writes: "I read the very interesting account of your Alaska trip. There are some facts in it of which I shall take advantage as occasion presents. I observe that you include in your list Aconitum Napellus. I should much like to know whether the plant you found is the one usually cultivated in English gardens, (in which case it will not be native on the Pacific coast,) or is it a form of the indigenous and polymorphous A. delphinifolium? The latter has been regarded as a variety of Napellus by several botanists, but it appears to me to be quite distinct, the racemes much shorter and more or less corymbose, with longer pedicels; the flowers brighter and of more delicate texture; foliage less coriaceous, paler, and of a brighter green, &c. Your remarks on the suspension of growth in plants, under the influence of cold, for protracted periods, are of special interest, and, I may add, importance. The subject attracted my attention some years ago, during a brief visit to the Rocky Mountains of the South, and from an entirely different point of view from that suggested to you. I have now an experiment in progress, started eighteen months ago, to ascertain whether roots adapted for cattle feeding, cannot be kept for an indefinite period in a fresh succulent condition. In a cellar on my farm here, the cellar built on a Colorado model, I have Mangel Wurzel roots as solid and succulent now as when they were taken out of the field in October 1883. They were kept all last summer without ice or artificial cooling, except that afforded by the cellar, and did not show any but the very feeblest attempt to sprout, and that very late in autumn, and only in some of the roots. The result of the experiment so far is of great practical importance, but I am desirous of ascertaining how far it can be carried. Our farmers here have hitherto had the greatest difficulty in keeping their Mangels good over the first winter, or until the advent of green grass in spring. I hope to be able to show them that they can provide summer as well as winter feed by growing roots, and thus be independent, to a large extent, of bad or late, or drouthy seasons."

[The above refers to a paper on the Flora of Alaska, contributed to the "Proceedings of the Academy of Natural Sciences, of Philadelphia," by the Editor of this magazine. As the subject has a practical value outside of its abstract scientific relation, we give below an extract referring to the above suggestions of our correspondent.—Ed. G. M.]

"On our return from Chilcat (written Tchillcat in some charts) down the Lynn Channel, we ran up Icy Straits into Glacier Bay, to the fifth or Muir Great Glacier; and on our return, passed in between the Beardslee Islands to the mainland at a point opposite Cross or Icy Sound in about lat. 58.30, called on our chart Bartlett Bay. This is on a peninsula formed by the junction of Icy Sound with the Lynn Channel, and nothing seems to be known of this immense tract of land, except what can be gathered from the not over-friendly Indians who live along the coast in the fishing season. An Indian trader, Mr. Richard Willoughby, told the author that at a point about twenty-five miles above this he had traveled northwest across the peninsula for some forty miles to Pyramid Harbor, near the mouth of the Chilcat, as he was understood to say wholly on ice. It is quite probable that at about a hundred miles north from Bartlett Bay the country is a vast ice-sheet, and there were circumstances which seemed clearly to show that at no great distance of time in the past the whole of the western portion of this peninsula was covered by ice; while on the eastern shore, on Lynn Channel, the forest trees showed the mixture of trees of various ages common to old forests, the forests of the western slope were all comparatively young, and none were evidently over fifty years of age. The earth to fifty feet or more in depth in many places was composed wholly of glacial drift, and on this were the young forest trees. Some remarks on these features more in detail are given at page 187, 1883, of the "Proceedings of the Academy." Since they were published, Mr. Dall has kindly informed the author that there is historical evidence to show

that this part was covered by ice at about the end of the past century. This being so, it becomes a matter of considerable interest to ascertain how so many plants have maintained an existence here—whether they have appeared since the recession of the ice, or whether they managed to retain their hold during the whole continuance of the ice-sheet.

At our landing place a small stream entered the ocean, and this stream came through a swampy valley a few hundred feet wide, extending into the land for an unknown distance. The hills of drift were on each side of this valley. All the plants were collected within a quarter of a mile of the mouth of this stream, and there is every reason to believe that a larger number of species might have been collected had there been time or opportunity for more inland research along its line. By the margin of the swamp were rocks from five to ten or twenty feet above its ground level, and not covered by drift; but on the more level rocks often with a few feet of sand, which had evidently blown in during the course of years. Yet with every opportunity to do so had there been time for the work, very few of the plants along the line of the stream had extended to the drift deposits close by. These plants were not brought there by the drift. We may say almost with certainty that they were there during the period when the land was covered by ice. How did they manage to maintain themselves under these circumstances? Were they wholly covered by the ice; or were there rifts and clefts in the ice-sheets deep enough to allow plants a summer of recuperation?

I think we need not regard the last consideration as one of necessity. There is reason to believe that under a low temperature plants will retain vital power for an indefinite period. Mr. Douglas, of Waukegan, Illinois, once sent to me young trees of Catalpa speciosa, that had been placed in sand in a cool cellar and forgotten a year, and that remained the whole twelve months dormant, and grew the next year when planted out. Dr. Maxwell T. Masters, of London, has called attention to the case of an orchid which, as I remember, remained under ground a whole season without growing, and this has been adduced as a probable explanation of the non-appearance in some seasons of plants which are plentiful in others. If a plant will remain dormant one, two or three years under unfavorable conditions for growth, who shall say how much longer a period they may not live, under conditions favorable to dormancy only? I have a strong suspicion that just at or below the freezing-point, roots may live for an unlimited number of years; and that a district might be covered by an ice-sheet for a quarter of a century or more, and the plants beneath retain full vital powers.

By referring again to my remarks on some geological features of this part of Alaska (page 183, Proc. Ac., as cited), it will be seen by a sunken forest of apparently modern trees there is reason to believe that in comparatively recent times this peninsula was clothed with a rich vegetation—that it was of a sudden partially submerged and perhaps as suddenly elevated again a little—and that all these changes have been the work of but a few hundred years. The plants in question have probably survived through all these changes, though perhaps wholly ice-covered at times, and have not been brought here by modern agencies; and if these suggestions, which are offered only as great probabilities, should get fuller confirmation from any one in the future who may have opportunities of going more fully into an investigation of the spot, it will give additional interest to the study of botany in connection with the great changes which have been going on over the surface of our globe.

From other botanical evidences which southeastern Alaska affords, I am inclined to believe that geological changes in this section have not required the long periods to effect which geologists usually demand. In the vicinity of the Davidson Glacier, a little below Pyramid Harbor, layers of ice may be seen covered by sand and earth, and prevented from rapid thawing—only an occasional spot showing the icy bed beneath—and yet alder and other plants grow within a few hundred yards. On the other hand, near the Muir Glacier, at the point where the river-bed beneath the ice diverges from the glacier's direct course, the only sign of arborescent vegetation is from a few score of willow-bushes, scattered on the mountain-side. Beneath the drift, hundreds of feet below, is a forest buried as it grew. Pines, alders, and similar plants spread so readily in this region, that these bare hill-sides would assuredly be clothed thickly with a forest vegetation, thus replacing the forests which have been swept away, if there had been time enough for the purpose. The immense area and great depth of these treeless drift formations would surely be regarded as requiring perhaps many centuries for deposit, but for the evidence which the botanical observations afford that the whole change must have taken place within very recent times."

IMMEDIATE INFLUENCE OF POLLEN ON FRUIT.—A leading pomologist, himself of great experience in crossing and hybridizing, writes: "When it can be shown that a long variety of a cucumber can, by immediate crossing, be made to produce a short one, or a crook-necked squash be transformed into one of turban form, then I shall have more confidence in the new theory."

[Our correspondent makes a good point. So far as squashes, pumpkins and melons are concerned, there is not the slightest evidence that they have been immediately changed by the pollen of another variety. The "theory" is not exactly new. Some gentleman communicated to the Royal Horticultural Society of London, in the early part of the century, a paper, showing that a netted melon had produced smooth fruit as well on the same plant. This was assumed without the shadow of proof, to be from immediate action of pollen,—but we now know that changes in netting, like the russet of apples, can and do often come where there is certainly no chance for pollen influence. But from this paper appears to have arisen the "theory" that melons are immediately influenced. Livingstone's experience with bitter and sweet melons is another illustration. We know in these days how this saccharine principle is affected. A Rhode Island Greening, sour in the East, is sweet in California. Melons lose their flavor or change their form—degenerate is the word—just as often when wholly alone, as when they are near pumpkins or cucumbers.

On the other hand, the Hon. Simon Brown, of Concord, Mass., than whom New England produced no more intelligent or careful agriculturist, in a paper in the Reports of the Department of Agriculture—for 1863, if our memory serves us truly—states that careful experiments in growing all sorts of cucurbitaceous plants together, for the purpose of testing this very question, failed to show the slightest indication of change in any one of them.

We have looked carefully into the literature of the subject, and find no fact adduced in favor of this theory that cannot be better explained in the light of modern facts, except, possibly, Indian corn.—Ed. G. M.]

CEDAR VINE.—"L," Salem Junction, N. C. writes: "I send you, by mail, a vine called here "Cedar vine, quite rare, seems hardy, and is quite ornamental. What is its proper name?"

[Botanically, Lycopodium complanatum. Near Philadelphia it enters largely into Christmas decorations, and is known as Ground Pine.—Ed. G. M.]

HOW TO HYBRIDIZE.—"P. H.," Peterborough, Ontario, Can., asks: "Is there a work from which I could learn the art of hand-fertilizing the blossoms of fruits and melons, &c.; the fertilizing the female blossoms with the pollen of the male blossom, or, perhaps 'hybridizing' might express it?"

[Crossing, or hybridizing, is very simple. We take the pollen dust from one flower and place it on the apex of the pistil of another. To make it sure that the flower you wish to raise the seed from does not get its own pollen, it is best to open the flower before it naturally expands, and cut off its anthers before they have had a chance to burst and throw out their own pollen. At the same time it is best to put the pollen of the male parent at once on the stigma. The stigma is usually not receptive—that is, has not the liquid exudation necessary for the effective reception of the pollen at this early stage,—but it remains on the stigma ready for use when the stigma is ready to receive it. These precautions are necessary in order that we may be sure the flower receives only the pollen we desire it to receive. Some cover the flower, after the anthers have been removed, until the time for the use of pollen has arrived, with gauze, to keep off insects that might bring other pollen,—but this is scarcely necessary when done in the way suggested. If any further information be desired we shall be glad to respond.—Ed. G. M.]

WAX-BERRY CANDLES.—"G" says: "Chambers' Cyclopædia says: 'Myrica cordifolia, of South Africa, yields wax for candles.'—Art. Candleberry. W. Fraser Rae, in his 'Newfoundland to Manitoba,' p. 127, says, that 'on the river Tête à Gauche, New Brunswick, bay-berry candles are commonly used.' I had some such candles made some years since; they were poor things. In the army we once had a supply of a cerate of myrica (wax). Very good it seemed to be."

[We believe it is a long time since any wax-berry candles were made in New Jersey. We should be glad to have any notes about this from those who know.—Ed. G. M.]

LITERATURE. TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

TREES GROWING THROUGH A TOMBSTONE.

BY JOHN WOODING.

I noticed in the December number of the MONTHLY, page 369, a communication by Dr. C. W. Greene, referring to a birch growing out of a chestnut tree. A similar curious instance came under my notice, in England, some fifteen years ago. With a friend of mine, I visited a place called Lucien, in Hertfordshire, about eighteen miles from London, to see, as was said, "the greatest curiosity ever heard tell of," situated in

Lucien churchyard. There we saw seven ash and three sycamore trees growing through a tombstone out of a grave. The stone was about twelve feet long, six inches thick, and eight feet wide. The growth of the trees had split the stone in all directions. Some of the trees at that time were seven inches through, and about fifteen feet high. The grave lot was enclosed with an iron fence twelve feet high, and the branches of the trees and some parts of the trunk had grown into the fence in all imaginable shapes and forms. Of course, there is a "true story" connected with the circumstance, as the people of Hertfordshire will strongly affirm. The person buried in this grave was a lady of title, Lady Anne Grimstone, who was buried there somewhere about a hundred years ago. She was an unbeliever in a Supreme Being—in fact, an infidel—and those who doubt it can buy a book, sold by pedlars for six-pence, strongly confirming the horrible story in detail. This lady asseverated previous to her death that if there be a God or devil, a heaven or hell, she hoped ash and sycamore might grow through her body. No one planted these trees there, and the people religiously believe that to prove to the living the horrible heresy of the dead, the trees came from her body, and the more to attract attention, have grown up through and broken the stone.

Pencoyd, Montgomery Co., Pa.

MY SECOND VISIT TO LORILLARD'S GARDENS.

BY WM. T. HARDING.

In the year of our redemption '83, when flowers which owe their birth to genial May were freely blooming in their native habitats, I started from Mount Holly, to see all I could of them, between there and Jobstown. In her spring attire nature seemed gay and beautiful on every side, for look where I would, while passing along through leafy groves or open glades, her smiling vernal charms graced the changing scene. Again, through other approaches to that rural spot, in company with an esteemed friend, I found myself in the middle of cold January, in Mr. Lorillard's famous gardens. But no sound of murmuring streams, rippling rill, or the cheery voice of feathered songster salutes the ear. No sight of living leaf or fragrant flower, greets the eye, or olfactories, on this occasion. Implacable, chilly old "winter in his roughest mood," was blowing his icy breath in piercing blast, to the great discomfort of man and beast exposed to the frigid breeze that blew bitter and chill. While the blustering wind howled and whistled among the bare limbs of the fruit trees near by, we hurriedly crossed the frost line by stepping over the threshold of one of the inviting glass structures before us, and in a moment felt the pleasant warmth of a sunnier clime. Marvellous indeed, seemed the sudden change of temperature, from one side of the door to the other, where large handsome red-ripe tomatoes, hung in heavy clusters overhead and on all sides of the first house we entered. And as the assistant gardeners were in the act of gathering them, I could say with Milton,

> "I saw them under a green mantling vine,
> Gathering ripe clusters from the tender shoots."

From two similar sized houses, each of fifty feet in length, two hundred and ten pounds of perfectly formed, well ripened tomatoes had been picked during the previous fifteen days. And from the vigorous appearance of the plants, even a larger quantity might apparently be had in the next fifteen days. And thus in succession until those out of doors, later on, come into bearing, an abundance will be produced to amply supply the daily demand.

The next division door opens into a house of ripe strawberries—the second crop of the season—from which several hundred exhausted plants of an earlier forcing had been removed to admit an equal number of others to succeed them, and which bore evidence of successful culture. A hive of busy bees placed inside the hothouse to assist in the fecundation of the early blossoms, were enjoying a premature summer as they diligently buzzed about from flower to flower in search of nectar. A square of glass had been removed from each partition to allow the apiarian throng to pass in and out from house to house in "the pursuit of life, health and happiness."

Simple as it may appear at first sight, the particular instance alluded to, as did many others, showed the wisdom and practical professional knowledge of the courteous and intelligent manager, Mr. John Gardener, who deserves great credit for the satisfactory results so pleasing to behold. Then there were other houses of them in various stages of growth, from the first indication that vegetable action had commenced, to the blossoming and fruit-forming period. These would be subject to the same course of treatment the others had previously gone through. Seth Boyden Mr. Gardener considers the best kind for early forcing; the blossoms of which stand well up above the leaves, which renders them the less liable to damp

off during the dull and unfavorable weather when the bright face of old Sol is often obscured.

A goodly number of pots of thrifty-looking Sion House bush or snap beans were bearing an excellent crop. The same might be said of the American Wonder peas from which, like the beans, fair quantities had been picked for a length of time. On Christmas day Early Rose potatoes of good quality were dug for use, which, together with many other kinds of culinary vegetables, were successfully forced for the festive occasion.

Fine tender looking asparagus, sufficient to supply, one would suppose, every family in the village, had been freely cut every day since December. Of Cauliflowers, Early Horn Carrots, Lettuce, Radishes, etc., immense quantities are produced under glass, while Mushrooms and Sea Kale vegetate in dark cellars specially constructed for them.

A promising house of grape vines was showing an abundance of incipient bunches, which proper attention will fully develop into fine ripe clusters in due season. Then three houses of the same dimensions, namely fifty feet each, were devoted to peaches and nectarines, the trees skillfully pruned and trained to radiate in fan-fashion to stout wire trellises near the sashes. Several of these symmetrically formed trees were profusely covered with pretty pink blossoms, than which scarcely any known tree or shrub can surpass in beauty. And it is doubtful if any other fruit is more luscious than the choice kinds of well ripened peaches and nectarines—the latter, especially, when grown under glass. Every body appreciates them who has enjoyed the privilege of tasting them, and why this really delicious fruit is so seldom seen in the forcing house, seems incomprehensible to the writer. Early Rivers is the first to ripen, and is followed by Early Louise, while other approved kinds come on consecutively, with the greatest regularity, as long as the season lasts. Although the first named one is an excellent variety for forcing, its character for keeping is not the best, as, unfortunately, it soon begins to decay after ripening. Another house in this long range—upwards of five hundred feet—is, at the proper time, to be planted with nectarines, the early fruit of which the proprietor has a decided taste for.

Continuing on from one compartment to another, we enter one filled with the most popular kinds of Tea roses, grown in pots, from which an immense quantity of splendid flowers had been continuously cut during the last three years, without once allowing them to rest from their floriferous labors. To be constantly in bloom seems the natural propensity of many kinds of Tea roses; and if the same vigorous appearance can be maintained that they had at the time of my visit, I should judge they will never tire of well doing.

The glory had departed from the first lot of Hybrid Perpetual roses, (very strong plants, indeed) which had had their day earlier on. But others were steadily advancing to replace them, "in the good time coming." Mr. Gardener considers Magna Charta is one of the best varieties for forcing, and for that purpose grows it largely.

Without specifying each particular species of plant grown for bouquets and decorative uses, which would occupy too much space in these columns, I will briefly call attention to a few of the principal kinds, most highly esteemed by Mr. Lorillard and his family. Conspicuous among them are several hundred Gardenias, better known as Cape Jasmines, and which in every respect are worthy of first mention. A better-looking lot of good-sized, clean, handsome, healthy plants, I never saw in my long acquaintance with them. This very popular evergreen shrub when covered with a profusion of immaculate fragrant flowers is absolutely an object of exquisite beauty. The generic name, Gardenia, was given to the first one which arrived from China, in 1754, in honor of Dr. Alexander Garden, of Charleston, S. C., whose botanical knowledge brought him into correspondence with the celebrated Linnæus. There are some forty species in cultivation, most of which are natives of China, Sierra Leone, or the East Indies; and many of the pale yellow, or spotless white flowers they produce are exceedingly fragrant, while all are decidedly beautiful.

Sweet Orchids, Hyacinths, Stephanotis, Carnations, Richardias, Lily of the Valley, Heliotrope, etc., with Lilacs, Viburnums, Spiræa, Deutzia and other useful things, too numerous to mention, were there.

Among so much floral grandeur and delightful aroma, I feel constrained to notice in particular a pretty, modest-looking, little Australian plant, Boronia megastigma, which, if possible, is even more delicately odoriferous than its lovely sister, B. serrulata. In fact, two more interesting, or charming greenhouse plants are seldom, if ever seen, in any collection.

Among a splendid group of attractive Amaryllis, I observed the imperious and beautiful Cleopatra, splendid Perfecta marginata, unrivalled Unique, brilliant Coccinea, handsome and grand Nobilis, lovely Syrene, and sanguinary Macbeth, were some of the most magnificent kinds.

The patient and intelligent reader who knows whereof I write, will perceive, from the few species alluded to, what a rare combination of beauteous forms unite with the most subtile and exquisite perfume imaginable, to gratify the most fastidious and refined taste possible, kind Providence has provided for our enjoyment. And while feeling thankful for every blessing received, will frankly admit that this fair and flowery world of ours is not the dismal vale of tears the poor, unhappy hypochondriac would fain make us believe.

Mount Holly, N. J.

LINES ON DR. WARDER.

BY J. N. M.

His was the gentle spirit of the woods,
  The genius of the tongueless mysteries,
  Eternally that dwell within the trees,
The flowers, the grasses, and the bursting buds;
A member of their secret brotherhoods,
  He caught the everlasting sympathies
  Of all the lute-lipped leaves; he held the keys
Of nature's variant moods and solitudes.
  A Druid gray, his loving life-blood leapt
In transport tremulous, beneath the power
  Of beauty and of symmetry that slept
Within the petals of the frailest flower;
  Noblest of all the songless bards, he kept
His great soul stainless in his Eden-bower.

PERSONAL EXPERIENCES IN THE LIFE OF A GARDENER.

BY N. ROBERTSON.

In looking over the last number of the GARDENERS' MONTHLY, I notice that a correspondent asks how to establish himself as a landscape gardener, and your appropriate remarks thereon. With you, I say that one of the greatest wants of the day is, proper men at the head of our public parks in cities and towns. This does not arise because such men are not to be had, but, because, when a position of this kind is open, influence has so much to do with the filling of it. Capability is only a secondary consideration, if thought of at all. Examples are not rare of those who go blundering along, leaving marks that show too plainly that they have never studied the first requisites of what constitute an effective landscape gardener. Errors are easily made, and their repair is costly. A builder can commence his work and carry it into completion in a short time, but a landscape gardener can only lay the foundation of a work which nature has to complete for him in the after years.

Your correspondent says he advertised repeatedly and failed. I will relate what my advertisement was which placed me in the position I now hold. I may first say that I was born a gardener, for at a very early age my father saw my inclination was in this direction, and had a gardener come and clean a piece of waste land, and lay out a garden for me to spend my leisure hours in. This garden was my great delight. At the age of fourteen I, as most boys do, thought I had had enough of school, and I wanted to become a gardener. My father and his family were against it, not that they objected to the profession, but there was plenty to do at home on the farm, and there was no necessity for my leaving the family circle. I had a cousin, a gardener, and to him I went as an apprentice. As he was a bachelor, and considered crabbed, it was supposed I would not stay long with him. I look back with grateful feeling to him, for he spared no trouble to advance me in the art. He being a man who was constantly on the outlook for progressive matter, my five years of apprenticeship were well spent. The custom being to remove to some other place for a change and a variation of experience, I served one year as journeyman, and then was promoted to the whole charge of the place. On the expiration of that year I took it into my head to try a newer country, greatly to the sorrow of my employer, who wanted me to remain. I sailed for Canada, and on my arrival was employed the same day by an elderly lady, who had a large market garden, and employed many hands. There I spent a year and then I was put in charge of the place. I can never forget the kindness of this lady to me; better she could not have been to her dearest child. Another year passed and, ambitious to make progress faster, I left and tried several places, but was not extra successful, being ignorant of the practical working of them. This period covered several years, during which I kept myself posted in gardening by books &c. It was at this time that my advertisement began. I had bought myself a building lot, and had put up a cottage on the one-half of it; the rest I kept for a garden, in which I could devote my leisure hours. I was then running a store on my own account, and the hours for my garden had to be, for the most part, from four to eight in the morning. Now this little garden was my advertisement, and, in a large part, was the means of my getting my present position. I had it so decorated with flowers &c., that it was a matter of considerable interest to the inhabitants of the city. If any person asked me where I lived, I told them the street, and they would ask, "Is it where the pretty garden is?" Sunday afternoons I used to be much gratified by seeing the crowds of people that came to look in at it. Among them there once came two ministers of the Crown whom I was acquainted with. In the course of conversation they asked if I understood gardening. I said yes, and related what I have told above of my former life. Well, they said there was to be a good position for a person of that calling at the grounds around our Government Buildings, and asked if I would care to take it, promising their aid if I would. I said I would take it, and thought all was right, but I was told I must get all the influence I could to intercede for me. This was against me, for I had but few to go to. However, I got my papers ready, and here my little garden showed itself again. No one knew me as a gardener, but every one was satisfied I knew what I was about, and I had no trouble whatever to get every name I asked for, which made me renew my exertions. There were many applicants for the position, most of them being men of no knowledge, but who had considerable influence to back them. After a year's waiting in suspense, I got the appointment. My trials broke out afresh as soon as I commenced the work, which was a most difficult one, owing to a large amount of excavation which had to be made to suit a plan for part of it which had been accepted as one fitted for it. It will give some idea of the extent of the work the first summer, to say that $60,000 were spent on excavation alone, and large sums for three years more. The disappointed applicants for the position attacked me at every move, through the public print; so that I got almost ready to give up the place. I got so disgusted that I went into the chief architect's office and told him so. His answer was that as the Department had found no fault, I should go on. He counselled me to pay no attention to them, but to go on as I was doing and I would come out right. I did so, and the result proved the wisdom of his words. The many eulogiums I now hear about the work are very encouraging to me.

If your correspondent should ever be successful in getting a situation as a landscape gardener, let him pray that it be not a public one, for, if it is, he will have to endure many such unpleasant things as I have related, and, perhaps, a good many more. I may add that my success here has given me two chances to far more lucrative positions, which were very tempting. But when I looked back on the past, and saw the great pleasure I had had since my first years, I said to myself, my cottage and my little garden still remain, and, all things considered, there are associations here that could not be found easily. I have been frequently told I was foolish to devote myself so closely to this work, and that I would never get any thanks for it. I have got thanks a thousand times, until the cup runs over, well repaying me for my exertion. I am glad to see you make public Mr. Miller's affair at Fairmount Park, for this system of exchanging plants is an old established one, and was almost considered obligatory amongst gardeners in Scotland in my day there, and it would be a good thing if it were more practiced than it is. It is a pleasure to find the charges against Mr. Miller so utterly unfounded.

Supt. Gov't. Grounds, Ottawa, Can.

EDITORIAL NOTES.

SHOULD HORTICULTURE BE TAUGHT IN OUR PUBLIC SCHOOLS?—This question was ably handled by Professor Wickersham, late Superintendent of Public Instruction of the State of Pennsylvania, at the late State Horticultural meeting. Objection was made that studies were now too numerous for the six hours a day, and six or eight months in the year of public schooling, but the Professor explained that he did not recommend the introduction of this and similar studies in addition to those already included,—but in the place of some others. He contended that, as the result of a careful study of public education, that a large proportion of time spent on geography, grammar, examples, and so forth, was absolutely thrown away,—that the aim of public education should not be so much to educate as to place children on the path to educate themselves. Public school teaching should simply furnish children with the tools by which they could cleave their own way as circumstances should arise, and not to fit them for any particular way. Children should be taught to observe, to think, and to judge. He would have a garden attached to every public school, and take the hour spent on geography or grammar, and, with the children in the garden, with the living plants before them, and a teacher capable of explaining things, do more good than the book studies of a whole week. The remarks of the Professor made a deep impression.

DUNCAN RHIND.—Mr. Rhind is not unknown to our readers as a contributor of some excellent papers on garden topics. He is one of those accomplished gardeners who do credit to the profession,

and whose abilities and superior character for probity and honor fit them for positions of great responsibility and trust. It is one of the misfortunes of our country that when this class of talent is open for engagements there are no first-class situations open to receive them, and when they are it is not always easy to find the man. Mr. R. is now disengaged. His address is Jenkintown, Montgomery Co., Pa.

DR. ASA GRAY.—Florida has charmed Dr. Gray from Cambridge, and after touching at New Orleans, he will visit California, before returning to his home.

Mr. SERENO WATSON.—This diligent student has well earned a short vacation from his steady work at Cambridge. He was to leave on the 12th of the month for Guatemala.

LITHOGRAPHY IN THE NURSERY BUSINESS.—Of late years lithography has been brought into use as a very useful agent in advertising. Some of our nurserymen seem particularly to appreciate its advantages, as we judge from a large number of beautiful pictures on our table from Mr. J. T. Lovett, of Little Silver, N. J. Such enterprise deserves success.

GEORGE C. BRIGGS.—George C. Briggs was one of the famous firm of Briggs Brothers, who were the pioneers of fruit culture in California. Every one has heard of the wonderful—wonderful for that time—peach orchard near Marysville, and of the varieties of California peaches which bear his name. Of late years he gave his chief attention to the growing of grapes for raisins, and had at the time of his death no less than 1,200 acres in grapes, and was preparing to plant 6,000 more. His death occurred the last week in January, in the 61st year of his age. Those who know how much fruit culture in all new countries depends on the results of early experiments; how much has to be lost in early trials, and the planter to suffer by heart-burning disappointments before success is assured, will have cause to feel deep regret for the loss of such a man as this. Monuments have been erected to commemorate the services of men who have deserved far less of their country than Mr. Briggs.

SELECT EXTRA-TROPICAL PLANTS. — Readily eligible for Industrial culture or Naturalization. By Baron Ferd Von Mueller. Detroit: published by Geo. S. Davis, 1884.

This was originally prepared for Australian use, but the succinct information given of industrial plants adapted to temperate climates, is of equal value everywhere, and hence, there has been a universal demand for it. It has been reprinted in India, and translated into German for use in the Old World. In no country perhaps is there so much inquiry for economic plants as in the United States; and the enterprising Detroit publisher, who has now given it to our country, deserves national thanks.

The plants of this continent come into the list in a work like this, as well as those of other portions of the earth. As an illustration we take at random the following: "Chlorogalum pomeridianum (Kunth) California, frequent in the mountains. This lily-like plant attains a height of 8 feet. The heavy bulb is covered with many coatings, consisting of fibres, which are used for cushions, mattresses, etc.; contracts are entered into for the supply of this material on a very extensive scale (Prof. Bolander). The inner part of the bulb serves as a substitute for soap, and the possibility of utilizing it for technological purposes like the root of Saponaria might be tested, as it contains saponin." "Fraxinus sambucifolia (Lamarck), Black or Water ash of North America. Attains a height of 80 feet. Wood still more tough and elastic than that of F. Americana, the white ash, but less durable when exposed; easily split into thin layers for basket work. Its wood is comparatively rich in potash, like most of its congeners; for oars and implements it is inferior to that of the white ash (Simmonds)." Among Australian plants a number of the most useful Eucalypts are described, as for instance, "Eucalyptus punctata. The Leather-jacket, or Hickory Eucalypt of New South Wales. A beautiful tree with a smooth bark, attaining 100 feet or more, of rather quick growth. The wood is of a light brown color, hard, tough and very durable; used for fence posts, railway sleepers, wheelwright's work, also for ship building (Woolls)." Then, again, among Europeans such notes as these: "Acer platanoides, the Norway maple (Wild); south to Switzerland; up to 80 feet high. Found hardy in Norway up to 67°, 56′ N. Attained in lat. 59° 46′ a diameter of 3½ feet (Schrebder). The pole wood much used by cabinet makers. Tint of the autumn foliage golden yellow. A tree of imposing appearance, much recommended for ornamental gardening; it gives a denser shade than most of the other maples."

In this concise manner almost all that is known of the economic character of all plants in use is given in a closely printed volume of 449 pages.

One of the most useful features of the work consists in the numerous indices, tables, and lists of cross references. Plants yielding herbage, plants yielding culinary roots, cereals, pulse, esculent fruits, avenue trees, dye-plants, hedge-plants, and numerous others are all indexed by themselves. Indices of common names, and botanical names, and systematic indices of botanical names for those who are so inclined.

As a work of reference, few intelligent cultivators can afford to be without it, while we suppose as a matter of course it will find a place in every American public library.

HOW TO PROPAGATE AND GROW FRUIT.—This is a small and very useful pamphlet, issued by Mr. Chas. A. Green, editor of the *Fruit Grower*.

STATE BOARD OF HORTICULTURE of California, ANNUAL REPORT for 1883. From A. H. WEBB, San Francisco, Secretary.

Although this body is incorporated as a Board of Horticulture, we judge from the report that it has nothing to do with horticulture in its accepted sense, but aims at the development of commercial fruit growing. This is rather a branch of agriculture than of horticulture. Horticulture deals with the garden—agriculture with the farm, and a fruit farm is not a fruit garden. The fruit farm excludes everything that we can properly understand by a garden—*hortus*— while horticulture takes the garden in as its main idea, making fruit culture a part only, though an important part of its operations. The confusion of terms does a great injury to the cause of real horticulture.

In its proper field—Pomology—this report will be found of great value to fruit growers on the Pacific slope. Insects and diseases receive particular attention. We are especially interested in noting how our brethren are battling with the codlin moth, and it will be worth noting in the future how far the heroic efforts to stamp out the enemy are rewarded by permanent success. Mr. De Long here tells about their trials. They nearly exhausted the fruit crop one season in the effort to destroy the insect. In one night they killed 1579 moths. During the season they killed 11,926 moths. Bands were placed around trees, and thousands of the larvæ destroyed, of which no account was kept. Somehow, all this destruction made little difference to the injury done to the crop. In 4018 boxes of apples only 1500 baskets were got out good. In the language of the report "it is found almost impossible to cope with the insect." In an apple house, after apples had been pretty well selected, moths would continue to come out all the season. They were killed by entering with a lamp each day, and the number killed recorded. They commenced to kill on April 15; by May 15 they had 86 dead. From this time there was an increase daily. For instance, May 19, 32; May 25, 133; May 28, 194; June 2, 275; June 4, 308; June 7, 517. From this time out there is a decrease, though slowly, for on June 15 there were 436, and on June 26, 425, and on July 2, a sudden jump to 492, when the decrease became very rapid; July 8, fell below the hundred, being but 57; August 3, only 7 are recorded, and the last ones caught were on August 12, when there were 3.

The continued efforts at destruction must, however, tell in the long run. Lamps set in tins filled with water seems a good plan for orchard work; attracted by the light they tumble in the water and drown.

The report is one of the most useful that has come to our table for a long while.

PALMER'S MONTHLY.—This is a new venture from Kansas City, and is to be "devoted to the interests of nurserymen and planters, and kindred affairs." It is of similar style and character to Green's *Fruit Grower*, of Rochester, and should have a good field in the West.

SCRAPS AND QUERIES.

REMINISCENCE OF A. J. DOWNING.—Mr. T. S. Gold, West Cornwall, Conn., notes: "Your remarks upon the work of A. J. Downing in the interests of landscape gardening, in the February number, called out by the recent death of his brother, Charles Downing, call to mind an occurrence many years ago. I spent the winter of 1841–2 in Waterbury, and was confined to my room for a few days by illness. Dr. Leavenworth called one day just after dinner, and would not remove his overcoat, as he designed to stay but a short time. He took up 'Downing's Landscape Gardening,' then just published, and did not lay it down till the shades of evening rendered it too dark to read. There was a charm about this book that no lover of rural life could resist. You truly say, 'he had the essential enthusiasm that was catching to all who came into contact with him.'"

HONORABLE NAMES TO PLANTS.—"J. H. S." says: "In reading your remarks on Panax Victoriæ, and our English cousins naming new plants in honor of their nobility or royalty, I thought in this the English have a decided advantage over

Americans, who, for want of something new, take old-named varieties of Pelargoniums, and re-christen them, not in honor of royalty, but the nearest approach they can make to it. For instance, Lady Washington, Gen. Grant, Double Gen. Grant, &c. In double Bouvardias they have done precisely as the English."

[From the tenor of our correspondent's remarks, it seems he understood us to ridicule the naming of plants after distinguished personages. We have read over again what we wrote about Panax Victoriæ, and cannot imagine how he derived that impression. Our intention, and, we think, our expression, was that when our English friends felt they had something worthy of general regard, they gave it a distinguished name, and we took it simply as an additional warrant that the plant was worthy when so named. We have no objection to distinguished names.—Ed. G. M.]

ORIGIN OF THE NAME PERSIMMON.—"G." says: "The European Diospyros Lotus, or date-plum, is called Pishamin in Chambers' Cyclopœdia, Art., Date Plum. This word seems to be suspiciously like Persimmon, but the books say the latter is an Indian (American) word."

[European encyclopœdists are not as careful in many cases as one should expect from the pretensions of such works, and we doubt whether "Pishamin" was ever applied to the Diospyros Lotus. Some author, Parkinson, it runs in our mind, tells that Captain John Smith brought some of our kind, Diospyros Virginiana, to Queen Elizabeth, and told her the Indians called them "Pashimin." Persimmon seems to have been a modern improvement on the original word. At any rate it fixes the origin of the name, whatever should be its orthography, and Chambers must be wrong.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

SPECIAL PREMUIMS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.

BY B.

In your magazine for February, commenting on the Prize Schedule of the Massachusetts Horticultural Society, you refer to the rule recently passed that no premium shall be awarded at any exhibition except those authorized by the Society, and question its wisdom. The rule is simply to prevent the offering of prizes by tradesmen who seek to advertise some especial novelty in this way, and to put an obstacle in the way of having the exhibitions used for advertising purposes. The various awarding committees have the authority to award gratuities at any exhibition to any worthy exhibit which does not compete for a stated prize named in the schedule, and this has been the custom for years. Quite a large sum is expended in this way each year, at the discretion of the committees, so you will see that the Society accomplishes just what you consider to be the proper method. Naturally the Society has had the benefit of long experience as to the best manner of making awards, and its system is unquestionably the wisest and most equitable of any adopted by similar Societies in this country.

[This puts the matter in a very different light. The Society is undoubtedly right in regard to these "special" premiums. The misunderstanding arose from the Society calling "gratuities" what the Pennsylvania Society calls "special premiums." What in Boston are called special premiums are "trade premiums" here.—Ed. G. M.]

FLORAL NOTES FROM NEW ORLEANS EXHIBITION.

BY M. H. LESTER.

At Horticultural Hall the principal regret is that Prof. Tracy was obliged to leave to attend to other business; not, however, without leaving an indelible mark behind him. The success of the Horticultural department is assured, whatever may overtake any other portion of the Exposition.

The most conspicious object in the building is a splendid Cocos nucifera, about 20 feet high, and in fruit. Nearly opposite, on the other side of the fountain, is a Cereus giganteus, 20 feet high, with several smaller Cocos, Oreodoxia regia, Musa sapienta, and some large Ficus and Cycas revoluta; and to crown all a beautiful specimen of Phœnix dactylifera. I think it is the most beautiful part of the whole concern.

The greenhouse department is all hung around with Orchids, Mexican, Central American, and British Honduras varieties. Several are in bloom, such as Epidendrum, Odontoglossum, and Oncidium in variety; also, Lycaste, and Cattleya Guatamaliensis. A local firm, Maitre & Cook, exhibit over 30 varieties of Palms; they have also a general collection, in which may be noticed a splendid specimen of Blechnum Braziliensis, and another, of Astrapæa Wallichii, a good thing; also a collection of Rex Begonias, and outside, roses and ornamental stuff.

Prof. Morriss, from Jamaica, has the most interesting exhibit in the building, consisting of over 50 varieties of Palms, and the nomenclature is perfect. Such good things as Areca lutesens and rubra, strong; Elaeis guinaensis and others, choice but small, in Bamboo pots; a splendid little case of Hymenophyllums and other rare ferns; over 40 varieties of sugar cane; a collection of Cinchona, together with a collection of all the fruits and nuts that have been acclimatised or are peculiar to that Island.

The next largest exhibit of general interest is from California. John Rock, of Santa Clara county, is well to the front with fruit trees, roses, conifers, evergreen and deciduous flowering and other ornamental stuff; such Palms as Corypha australis, Chamærops humilis and excelsa, Pritchardia filifera and var. robusta, and others; all well grown, handsome stuff.

A great many shining lights in the horticultural world have been here lately, among them Prof. Lemmon, from California, and Mr. Hovey, of Boston. A walk through the houses, is a pleasure not often enjoyed in a lifetime, with a plantsman of such taste and discrimination as Mr. Hovey. Mr. McRoberts while here represented A. Brackenridge, the great orchid grower, near Baltimore.

Gardener to Prof. Richardson, New Orleans.

THE NEW YORK CHRYSANTHEMUM SHOW.

BY GENERAL NOBLE.

This magnificent exhibit deserves a record in your journal. It was held at Horticultural Hall, 28th street, New York, about the 8th of November last. This hall is about 50 by 75 feet in area. No other flowering plant was shown.

I confess that I was very green, till I saw this show, about the wonderful variety of tint, and style of flower and of culture which this plant can claim. I think a good many of your readers will confess to the same ignorance. I always loved the flower. There was an instinctive cheer in its brilliant masses, sheltered in some nook, or beneath the southern windows of your home. My heart warmed to them as the courageous rear guard of retreating summer, against the grim advance of wintry drear and frosts. But this New York show revealed to me capacities of the plant for floral loveliness and magnificence that filled me with delighted wonder and surprise. I now sympathize with the heathen Chinee and his neighbor of Japan, who look upon the chrysanthemum as the rival of that floral queen, the rose.

The area of the hall was girt with a brilliant mass of gorgeous flowers. Around its sides, there ranged a belt of potted plants, from 8 to 10 feet wide. The grenadiers of the tribe stood against the walls, crowned on single stems 7 to 9 feet high, with flower heads 3 feet across. From these stalwarts gradually descended blooms of lesser stature and more bushy culture, till their flower heads stood not more than two feet above the floor. Thus that hall was girt with a terrace belt of rich and brilliant tints, and lovely styles of blooms which no pen can paint. Not only every shade of the spectrum had place among these colors, but their variety realized the wonderful range of tint in their combinations.

Through this amphitheatre, so walled around by floral loveliness, ranged four broad tables, solidly mantled by the cut flowers of the chrysanthemum. In variety of tint and style, and in size of flowers, these tables rivalled the potted plants. Many were doubtless new varieties of this plant, showing the wonderful aptitude of the seedlings to take in divers shade of colors and styles. Some flowers were as regular and staid in their petals as a double dahlia or an aster. Others sported a plumage as loose and curly as a cupid's locks streaming in the wind. Some were no bigger than a button, while others stretched out from that size to six inches across their petals.

To some of your readers, those rich and perfect trusses of bloom, lifted on their tree stems 9 feet above the floor, may be a familiar sight and habit of the plant. I confess that to me, those tall and slender trunks, stiffened by rods to uphold those brilliant masses of color, were a wonder and a surprise. I had never even dreamed of such a floral possibility, except in the woody standard of the rose tree.

One of the exhibitors kindly told me how the feat was done. In the spring you choose a shoot, stout and vigorous, and pinch, cut and keep down all the rest. As that fixed on to make your stalwart gets stature and stoutness, pinch out all its side

branches or stems, keeping the base leaves of the pinched off shoots to give nourishment and girth to the trunk of your tree chrysanthemum. Thus go on till your flower head forms. From this, too, pinch out all weak and crowding shoots, so that your flower head has room to open with a glorious mass of bloom.

More than 500 distinct varieties were shown. The largest collection, and that to which the mass of prizes were given, was that of Messrs. Hallock, Son, and Thorp, of Queens, L. I. There were other exhibitors who, I think, shared with that house some of the highest prizes, but I do not remember their names. *Bridgeport, Conn.*

EDITORIAL NOTES.

AMERICAN POMOLOGICAL SOCIETY.—We understand that at the meeting this year, use is to be made of the knowledge of the members present, by introducing especially topics for discussion, on which we have not yet arrived at final conclusions, and by means of which discussions we may get the advantage of the views of leading representatives. Among other topics Dr. Hexamer will introduce some one in connection with the strawberry. Mr. Barry on nomenclature. The influence of pollen on the growing fruit, will be a prominent subject. Professor Lazenby would be a good one to handle it. Special fruits for the North, the South, the West, will have a share of attention; the gain to Pomology by the New Orleans Exposition; progress in American grape culture; diseases of the peach; insect remedies; the best latitudes for the most profitable culture of the several fruits. These are samples of some of the topics it is proposed to introduce intelligently, and discuss freely. From all we can learn the meeting promises to be one of the most practically useful in the history of the Society.

THE PENNSYLVANIA HORTICULTURAL ASSOCIATION.—This body had a very successful meeting at Lancaster. Judge Stitzel of Reading, who had been re-elected President for several successive terms, declined a re-election, from, as he expressed it, no lack of continued interest in the welfare of the Society, but from the pressure of advancing years and other public interests. Mr. Calvin Cooper a highly intelligent and active gentleman of Lancaster county, was elected to succeed him. The Society does not intend to relax in the slightest degree, its interest in the successful and profitable culture of fruits, but recognizes its mission as a promoter of intelligent Horticulture in all its branches. Cyrus D. Fox of Reading, Edwin Satterthwait of Jenkintown, H. M. Engle of Marietta, and other fruit growers gave great value to the deliberations by freely communicating the results of their successful experiences; while William Moon, Josiah Hoopes, and other well-known lovers of general Horticulture, took care of other departments. In the evening of the last day some three hundred persons were in attendance, largely of the ladies and gentlemen of Lancaster, and the influence for good of the whole meeting is no doubt widely spread.

MASSACHUSETTS HORTICULTURAL SOCIETY.—DEATH OF MR. DOWNING.—At the meeting of January 31st, Col. M. P. Wilder, in some feeling and appreciative remarks, introduced the following:

"Resolved, That the members of the Massachusetts Horticultural Society desire to express at the earliest opportunity their sorrow at the removal from earth of their late friend and corresponding member, Charles Downing, of Newburgh, New York.

"Resolved, That his life has been a blessing to mankind, and his death is a loss not only to our nation, but to the whole pomological world.

"Resolved, that while we thus speak, we would acknowledge most gratefully the Divine goodness which spared him to us so long, and that, although his star has now set, it has left a golden record which shall illumine the annals of pomology while the earth shall bear a fruit or the love of Nature shall have a place in the soul of man."

After remarks by Benjamin G. Smith, Robert Manning, William C. Strong, Joseph H. Bourn and the president, the resolutions were unanimously adopted.

Mr. Wilder then presented a beautiful painting of fruits, which Mr. Downing had directed to be sent to the society after his death. The thanks of the society were voted to Mr. Downing's executor for his promptness in sending the painting.

Programme of Meeting for Discussion during the Season of 1885.—Mar. 7. Propagation of Trees from Seeds, by Jackson Dawson, Jamaica Plain. Mar. 14. Nomenclature of Fruit, by Hon. Marshall P. Wilder, Boston. Mar. 21. Heating Greenhouses, by Joseph H. Woodford, Newton. Mar. 28. A comparison of Manures for the Orchard and Garden, by Prof. G. C. Caldwell, Ithaca, N. Y.

The meetings will be held at Horticultural Hall, Tremont Street, Boston, at 11 o'clock. All interested are freely and cordially invited to attend. O. B. Hadwen, Chairman Committee on Publication and Discussion.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXVII. APRIL, 1885. NUMBER 316.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

In these seasonable hints we endeavor to present such facts as may serve to jog the memory, keeping that which is absolutely new for the body of our work. In the South tree planting will be about over, while in the bleaker North with its remarkably persistent winter the work has but just begun. The fall of the year is the best planting season South; April and May, in the North. What we say now for the North will therefore soon be seasonable South; only a few months ahead of time, and therefore not likely to be forgotten. In regard to planting, we cannot do better than repeat advice we have more than once given in our paper, that to be successful, we should not let the roots dry for an instant between taking up and planting, everybody knows, but everybody don't do it; in fact, everybody deceives himself. We have seen this distinguished individual leave the tops of trees exposed to the sun, with a mat or straw thrown over the roots, and think all was right—or heel in for a day or two, by just throwing a little dirt over the roots. This is a little good; but everybody's fault is, that although this may be ten minutes of good, he expects to get ten hours, or even ten days' value out of it; and thus he suffers more than if he had done nothing, because he forgets that the branches evaporate moisture from the roots in a dry wind, and the juices go from the roots through the branches very nearly as well as directly to the air from the roots themselves. So with heeling in. The soil is thrown in lightly, or at most just "kicked" down. "It is only temporary," very few of the roots come in contact with the soil. They can draw in no moisture to supply the waste of evaporation, and thus they stay day after day—everybody satisfied because he sees the roots covered; really worse than if they had been exposed. We have no doubt that more trees are lost from imperfect heeling in than from any other cause whatever. Of course, if the tops be covered as well as the roots, there is less waste of moisture and more chance of success.

Where evergreens can be benefited by pruning, April is a very good month to attempt it. If a tree is thin in foliage at the base, the top of the tree, leader and all, must be cut away. It makes no difference what the kind is, all will make new leaders after being cut back, if properly attended to. We make this remark because there is a prevalent idea that pines will not stand this cutting. Of course the trimming should be done in a conical manner, so as to conform to the conical style of the evergreen tree. Sometimes an evergreen, especially a pine, will rather turn up some of the ends of its side branches than push out another leader; when this is the case, cut these away, and a real leader will form the second year.

In regard to lawn management there has been nothing much developed of late years. Of course our readers know now, that much of the complaint about small weeds getting ahead in the grass, comes from cutting the grass too short with the lawn mower. But the first cutting in spring should be done as early as possible, and as short as possible, or else when cut in summer it will leave a brown appearance every time.

COMMUNICATIONS.

NEW GERANIUMS.

BY D. R. WOODS.

We do not believe that of any other plant is there as much seed annually sown, in the hope of producing better varieties, as of the geranium. This is not strange as hybridizers have been eminently successful in their efforts to improve this popular bedding plant. Of the many new sorts sent out by the various raisers every year the great majority are grown but a season or two and are discarded to make room for later introductions. Last year a new type of geraniums was introduced in Europe, which we believe will completely change the aspect of geranium beds; we refer to the dwarf Zonale geraniums, introduced by Van Geert, of Ghent, Belgium, of which we give a brief description:

Archduke Rudolphe.—A magnificent flower of a deep rich scarlet color; very large and double.

Princess Stephanie.—A remarkable dwarf variety, covered with enormous flowers of a beautiful lilac pink color; very double.

Triumph of Ghent.—An excellent novelty which will be in great demand for borders and edges of flower beds. It is very bushy. The leaves are bordered with pure white, and the whole plant is almost covered with lively lilac double flowers, which glare brightly on the white background of foliage.

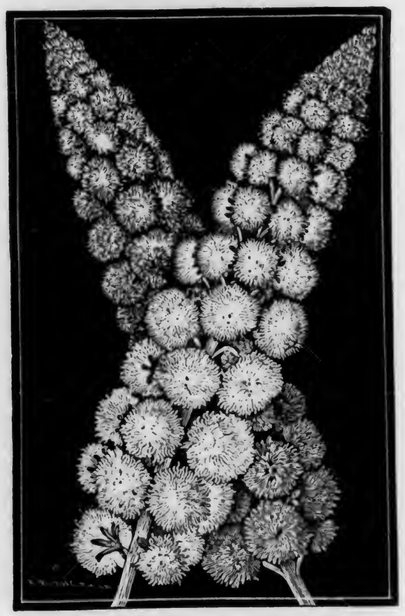
None of these sorts grow to a height of more than six inches, and for freedom of bloom are not equalled by any sorts in cultivation. Their habit of growth is strong and sturdy, very short jointed, and consequently the appearance of the plant is compact. They will be valuable for borders of beds as well as for ribbon lines and will also be valuable in fine bedding designs and mosaic work, giving us additional colors for this class of work. This will certainly be appreciated by those floral artists who are ofttimes perplexed in trying to harmonize colors and give pleasing contrasts out of an exceedingly limited variety of plants. We are advised that more varieties of these dwarf geraniums, of new shades and colors, will be offered for sale in France this spring. After obtaining them and giving them a trial next summer, will report to the readers of the GARDENERS' MONTHLY.

New Brighton, Pa.

NEW DOUBLE WHITE MIGNONETTE, "SNOWBALL."

BY W. F. DREER.

During the summer of '82 Mr. George Knoll, of Bethlehem, began experimenting with the various leading kinds of Mignonette with a view toward its improvement. Of a large number of seedlings obtained from a mixed bed of Parsons' White, White Spiral and Ameliorata, the subject of our sketch was the only distinct result. It was carefully kept through the winter of 1882–83, well rewarding the care bestowed upon it, by a liberal production of flowers of improved color, charming appearance and fragrance.



Planted out during the summers of 1883–84, it retained its distinct character through the hot and dry months, attracting attention by its beauty and novelty. The habit of the plant is compact, pyramidal and floriferous, the trusses of bloom being carried well above the foliage, which is a deep glossy green. Planted out it grows 12 to 18 inches high, or if trained as a tree attains a height of 3½ to 4 feet, forming heads of surpassing loveliness.

The "Snowball" has attained and will hold for a long time to come, first place among numerous claimants for recognition. Unlike many of the so-called "white" varieties, which have really been of a dull gray color and having little fragrance, this sort is pure white, very full and double and possessed of the true Mignonette odor. Its habit of growth, freedom of flowering, charming color and fragrance, render it an admirable pot plant either for house or dwelling.

[The above cut appeared in our advertising columns last month; but we reproduce it again here, in order that it may go with the history of a variety which, by the samples sent to us, appear to have more than ordinary merit.—Ed. G. M.]

THE CLASSES OF ROSES.

BY HENRY B. HAVENS.

China or Bengal.—A native of China brought to Europe during the eighteenth century. They are of moderate, branching growth, flowers of medium size, and require a rich soil and close pruning. They give a greater quantity of flowers during the season than any other class.

Bourbon.—A native of the Isle of Bourbon. The varieties vary greatly in growth, but most of them are of vigorous habit, and dark lustrous foliage. The flowers are generally of light shades, and found in clusters, and are especially valuable in the autumn; those of moderate growth require close pruning, and are useful for low beds on the lawn or for borders.

Climbing Teas.—This class contains three of our finest climbing roses. Climbing Devoniensis, Gloire de Dijon, and Reine Marie Henriette; all of vigorous growth when well established. When protected from the wind, and in rich soil, the latter two will bloom continuously from spring till late in the autumn.

Hybrid Climbers.—Of modern origin and from various sources, generally sports from Hybrid Perpetuals. In growth not equal to the Climbing Teas, but desirable for Trellis or Pillar roses.

Hybrid Noisette.—This is a modern group obtained chiefly from crosses between Remontant, Bourbon and Noisette roses. The flowers are mostly white, of medium size, and generally of good form. The varieties generally, though not always, bloom in small clusters, and are freely produced until late in the season.

Hybrid Perpetual or "Remontant."—A most valuable class, and in England, standing at the head of all roses. The first varieties sent out were from crosses of Bourbons, upon Damask Perpetuals and Hybrid Chinas; later crosses were made with varieties of Provence, Damask and French roses, upon Bourbons, Bengals and Teas, and vice versa. Those that are of vigorous growth as in other cases, need much less pruning than those of dwarf habit, for if cut back too severely, they run too much to wood. This class thrives best in rich soil.

Hybrid Tea.—A new group produced by crossing Teas with Hybrid Perpetuals. There are but few varieties now in this class, but the number is fast increasing. This class of roses, on account of its novelty and promise of usefulness, is now looked upon with more interest than any other, its best representative being La France—which, with a spicy perfume peculiar to itself, is the sweetest of all roses, and equal to any in profusion of bloom.

Moss.—Believed to be a sport from the Provence rose, and was introduced from Holland about the beginning of the seventeenth century. They are distinguished from other roses, by the moss-like substance which surrounds the flower buds and by the marked Provence scent, the shoots are thickly covered with thorns; as a class they require close pruning, rich soil and high culture.

Noisette.—This is of American origin, and was sent to France about the year 1817. This group is naturally of vigorous growth and produces large clusters of flowers. Through hybridization with the Tea section the varieties have partially lost the clustering tendency, but the flowers have much more substance, and are far more beautiful; certainly nothing can surpass a wall covered with Marechal Neil, or Cloth of Gold. One of the best known is Lamarque, which produces an immense quantity of flowers during the season; and nearly all the fine Tea Noisettes are traced back to this variety. These roses must not be pruned except when it is necessary to cut away shoots altogether.

Polyantha—Brought from Japan about the year 1865. The foliage and flowers are both very small. The finest variety of this group, Mdlle Cecile Brunner was raised from a seedling of Polyantha, crossed by a Tea; as a class they are ever-blooming, of slender growth, producing a great quantity of exquisitely beautiful flowers; as an edging for a bed of Teas they are very effective.

Prairie.—The Prairie rose is indigenous to the

country, being found in Michigan and many of the Western States. The most valuable of all the non-remontant climbers. For rapidity of growth, they are unexcelled. The flowers are produced in large clusters during the summer. The Queen of the Prairies seems to be the most useful of the group.

Tea.—Several varieties of this group were introduced from China in the early part of the present century; among them were the Blush Tea and Yellow Tea, two varieties from which most of the sorts now in cultivation have descended. Most of the varieties in this group are very sensitive to neglect, and will show very quickly whether they have met with good or ill treatment. The soil can scarcely be made too rich, and should be well drained. The varieties of moderate growth require rather close pruning. The flowers vary greatly in size, as well as in fullness, and for delicate beauty—refinement of color, and wonderful fragrance—they are unequaled. It is principally for their beautiful buds that Teas are highly prized. *Oakland, Cal.*

[We take this from the catalogue of a rose growing company, of which Mr Havens is the manager, which gives a full and concise description of nearly every rose that is known in gardens to-day. So many people who love roses do not know the classification, that we are sure the condensed information will be very acceptable.—Ed. G. M.]

COMBINATION HEDGES.

BY J. R. S.

An arbor vitæ hedge separating the vegetable garden from the lawn, occupying more than six feet in width of valuable ground and having become somewhat dilapidated from its thirty years of service, was removed and a galvanized buckthorn fence with eight strands or rails (it is not wire) attached to planed and painted locust posts five feet high, was put in its place. Climbing roses of various kinds were set about eight feet apart along the whole line; after two seasons' growth they cover the fence completely; many of them having been cut back four or five feet the past summer.

The barbs on the buckthorn fencing, without being so sharp as to make the training of the rose shoots unpleasant, are yet sufficiently prominent to prevent the shoots from slipping, so that no tying is necessary if they are interlaced through the rails.

The corner or straining posts were mortised into pieces of locust seven or eight feet long, and the braces, also of locust, notched in at such height that they are entirely under ground.

A rose hedge is thus quickly and cheaply made, is a far better barrier, more ornamental, less expense for its yearly care than a hedge, and occupies six inches instead of six feet in width of land.

Some of the stronger growing sorts of roses would be better ten or twelve feet apart.

Rahway, Feb. 16th, 1885.

[The idea of combining barbed wire fences with live plants opens up such a wide range of possibilities that it is bound to grow, and we shall no doubt see Osage orange and other plants that require continual labor to keep them within bounds, completely abandoned. Any bush strong enough to hold a wire, will make a permanent fence, and then we have hundreds of things to choose from. —Ed. G. M.]

THE YORK AND LANCASTER ROSE.

BY MRS. J. S. R. THOMSON.

Several years since the rose growers had given them (by Peter Henderson I believe) a new rose, striped; and therefore called American Banner. It created quite a sensation and demand. I amongst the rest bought it and must confess to a great disappointment after seeing it flower. It does not here interest us to discuss its merits, but I want to call your attention to a rose now very scarce in our southern gardens; but a few I saw last season in such luxuriant bloom that several flower loving people "talked it over" and came to the conclusion that in it the "American Banner" had more than its compeer. Doubtless you know the rose under its old-fashioned name of "York and Lancaster." Named from England's war of the roses, whose emblems were one a white, the other a red rose, and afterwards commingled in one. This rose is a deep glowing rose color, distinctly striped with pale flesh, only semi-double, a profusion of golden stamens in fine contrast to the rose. Why cannot this rose be made known again to the flower public? If they raved over "American Banner," which is an extremely delicate Tea, why not accept this York and Lancaster which is is as hardy as a wild Cherokee rose, and make it a prime favorite? I have secured a goodly number of them and intend propagating from it and try to re-introduce it, on its merits alone.

Will you not write an article upon this rose? I would like to know more of it, its origin and merits, than I do. I love flowers and their culture with my whole ardent southern soul, and never tire of reading, writing, working or talking about them.

[We are very glad to know this lovely rose is still in existence. It is many years since we saw a plant. We share our correspondent's warm admiration for it. In regard to its striped character we may remark that all of this class come self-colored at times, just as she found it with the American Banner.—Ed. G. M.]

EDITORIAL NOTES.

THE LOVE OF HERBACEOUS PLANTS.—In an admirable essay before the Massachusetts Horticultural Society recently, Mr. E. L. Beard says: "What is needed in the place of bedding plants is diversity of form and color and artistic combinations. Let us mark each season with its flowers and enjoy them in their order, and the development of our interest and pleasure will become more full and gratifying with each successive year. Our attention will be diverted to new pleasures, before unknown or unappreciated, for the realm of horticultural investigation has no limits. A well-known writer, summing up the contrast between bedding and hardy plants, says there is nothing whatever used in bedding to be compared in any way—color, fragrance or bloom—to that found in many families of hardy plants. There is no beauty at all among bedding plants, comparable with that of lilies, irises, pæonies, delphiniums, narcissi, and a host of others. Are we to put aside all this beauty or put it into a second place, for the sake of the comparatively few things that merely make beds and lines of colors for two or three months, and from which you cannot cut a nosegay? Let those who like bedding plants enjoy them; but no one who knows what the plants of the northern and temperate world are can admit that their place is a secondary one. We might also argue from an æsthetic standpoint against the artificialty of bedding out, and its violation of artistic ideas, independent of its practical disadvantages; but as we have to deal with practice rather than theory, it is better to attempt to show how many beautiful, and to most people unfamiliar, plants can be used to decorate our gardens and grounds, many of which are barren wastes compared with what a little knowledge and taste might make them. The essayist therefore turned from any arguments, for or against favorite plants, to consider how our gardens may be made beautiful by the culture of hardy plants."

DANGERS FROM WIRE FENCES.—*Forestry* says that among the dangers which follow wire fences in that part of the world is the death of cattle from lightning strokes conducted by the fences.

CALLICARPA PURPUREA.—There seems to be several species under this name in cultivation. Certainly the one figured in the London *Garden* of June 16th, last year, is not the one so known in American gardens. The American is much prettier as a shrub than that can be.

SCRAPS AND QUERIES.

COPPER WIRE FOR ZINC LABELS.—In reply to an objection that the eyelet hole in a zinc label soon wears away when it is suspended by copper wire, "J. R. S." says: "The points of contact are so minute between the wire and the label, that I think enough moisture could not lodge there to set up a galvanic action. Soft galvanized wire or lead wire might be used."

RAISING CHRYSANTHEMUMS FROM SEED.—"Mrs. J. G. M.," Buffalo, N. Y., writes: "Could you not give, for amateurs, in the next issue of the GARDENERS' MONTHLY, some directions about the raising from seeds, and care through the summer, of the Japanese Chrysanthemums? I am about to try some, inspired by the New York Horticultural Show last fall, and am most anxious to succeed."

[Chrysanthemum seeds are generally sown by the raisers as soon as ripe; that is, early in winter, and sown at once in a greenhouse. The plants are quite forward by spring, and if set out in good garden ground, will flower the following autumn. Those who have no greenhouse could sow in the open ground in early spring, but we do not know whether such plants would bloom the same year. The very double Chrysanthemums do not seed well, for, though a double Chrysanthemum is not double as in the case of Roses or Carnations, through the stamens changing into petals, there is a sexual change in Chrysanthemums, Dahlias and many other flowers of the Aster-like or composite class, with the change in the form of the florets. In the single or "anemone-flowered" Chrysanthemums, Dahlias, and so forth, the central florets are tubular, and each has a pistil and stamens. A double flower of this class is simply the changing of a tubular to the strap-shaped character, which generally forms the outer row of florets. This outer row is very often neuter, or

simply with pistils only. When the tubular florets become strap-shaped they carry these sexual characteristics with them, and hence, for want of pollen, they rarely produce seeds. This is why so few seeds are usually found in the very double Chrysanthemums. Those not quite double are the best to use for seed parents.—Ed. G. M.]

UMBRELLA TREE.—"D. R. W.," New Brighton, Pa., writes: "I send you a seed received from a correspondent in Texas, who calls it "Umbrella Tree" or "Pride of India." If you know it will you please give Botanical name, and state if in your opinion it is desirable for cultivation?"

[This is botanically Melia Azederach. It is an excellent street tree for the South, but only with difficulty stands the winter at Philadelphia.—Ed. G. M.]

WINTERING ROSES IN THE NORTH-WEST.—"W. W.," Northfield, Minn., says: "In the December number a correspondent who signs 'M. L. H.' Minneapolis, Minn., says: 'I have no trouble wintering roses here.' If you could get your correspondent to communicate his method, it would be a great blessing to a great many lovers of the 'queen of flowers,' in this bleak Northwestern country."

[The method pursued by "M. L. H." for preserving roses there, would no doubt be very acceptable to many readers as well as to the writer of the above.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

We are pleased to note that the hints we recently gave in this department for good potting as a means for good plant growing have attracted wide attention. We have not seen for a long time anything in our pages that has been so widely copied and commented on as that chapter. We would now suggest, that next to getting good healthy roots so that a plant can grow freely, training is an important element in getting good specimen plants. We often see plants at exhibition of good form and good size, but the result rather of age or accident than of skill on the part of the grower. In exhibitions of Chrysanthemums, as we have had occasion to notice before, much of the interest in the fine specimen is lost because of the bundles of stakes and almost miles of twine that we see everywhere about them. The art should be to so give the plant a start that it will grow of itself the way we want it to grow. "As the twig is bent the tree's inclined" should never be lost sight of by the plant grower. The shoots may be staked out a little at the first start, so as to fill in a hollow space if there be one; and if there be not shoots enough, a strong one may have its point pinched out, so as to make it push some secondary side ones. But only the strong ones must be pinched back, because pinching has a somewhat weakening tendency, and we do not wish to weaken a shoot already weak. The object is to strengthen rather than put back a shoot already weak, so that all may have uniform vigor. In this way shoots at the base of a plant that are always weaker than those above, are strengthened by having the uppermost pinched back as they grow. We give herewith a sketch of a Fuchsia which we take from the London *Gardeners' Chronicle*, which plant was eight feet high, and, as the great number of flowers and leaves in the small space indicates, taken at a long view, illustrates what good culture can do. There is of course pleasure in having a Fuchsia plant, and in a few score of its beautiful blossoms; but how much more is the pleasure enhanced when we can have a specimen like this. It was grown by Mr. James Lye, a gardener near

Bath in England, whose greatest pride is that no one has ever been able to beat him in growing a Fuchsia. He has scores of plants as good as this.

COMMUNICATIONS.

CYCLAMENS.

BY M. J. EDMONDS.

I am glad to see an increasing interest in the growing of cyclamens. A great many persons have asked me what is the best sort to grow, and in reply I would say the Persicum and its varieties are my favorites. A good way to get an assortment is to raise them from seed. Of course the exact colors cannot be reproduced from seed; a packet of Persicum album will not produce all whites, neither will roseum all rose color. As good a plan as any is to get a packet of mixed seeds, from which will be had a variety to suit every one. With this I mail you a sample of blooms produced from plants from a mixed packet of seeds. They are mostly from young plants blooming for the first time. No. 1 are from Persicum, No. 2 from giganteum, and No. 3 from old plants. The young plants were watered with manure water but once. Just how long a plant will live I cannot say. In my collection are some seven years old that look good for as many more years. I write this as a general answer to inquiries received respecting this plant, and would have done it sooner, but was waiting till I could send you blooms from my young plants. *Gardener to James McCreery, Inwood-on-the-Hudson, New York.*

[The blooms were remarkably fine. Indeed we have never seen such large and handsome flowers before.—Ed. G. M.]

OF TASTE IN FLORAL ARRANGEMENT.

BY A LADY OF SOUTH CAROLINA.

I agree with "W." about the lack of taste in exhibitors at floral fairs or exhibitions. I had the pleasure six years since to be placed on a committee of three, to award premiums on pot plants and cut flowers. P. J. Berckmans (justly celebrated florist and horticulturist, and now in charge of Horticultural Hall in New Orleans Exposition) was one of the three. One lady had eighty-five named varieties of roses jammed and crowded on one medium sized waiter, not a leaf or bit of green—just the roses—so closely packed that it took a truly appreciative person to take in the rarity of her collection, for rare they were and fine specimens. Another with not half the variety had each variety displayed in a champagne glass—those funnel-shaped cut glass. Three of each—a bud, half-opened bud, and a full blown rose—with just foliage enough of its own to show its leaf characteristics, growth, etc., and to add to the rose's attractiveness. I made a table decoration for same fair which carried off first prize. I had an oblong tin trough, 3 inches high and broad, 18x22 inches long. I placed this on a large waiter, after arranging it full of beautiful flowers as far as the outer edge of the trough extended; in the trough, water and then flowers of delicate structure, tiny ferns, lycopodiums, partridge vine-bloom, lily of the valley, etc. From the inner edge of trough was a mirror which reflected the flowers and looked like a miniature lake, and in center of mirror I placed an exquisite three branching glass Epergne with the cream of my flowers. It had universal praise awarded it. That being six years ago, I have seen the same idea carried out further, having added small glass swans on the mirror as if swimming in the water. This arrangement I keep and use now whenever I entertain or have parties, and the effect is quite pretty.

MILDEW IN ROSES.

BY JOHN TILLOTSON.

I have read Mr. Veitch's article on mildew and his remedy, and I wish to say that I have used dry sulphur over twenty years and never saw any bad effects from it. No one need be troubled with mildew if he will sprinkle the flow pipes three times a week for two weeks, when steady firing begins in the fall, and once a week for red spider. His roses ought then to be healthy all the winter. Sulphur on hot-water pipes will not burn, and on steam pipes will melt at fifteen pounds pressure and run like water. Even that severe test will do no harm in a rose house, neither did it hurt smilax in the same house, and it has been repeated several times through the carelessness of the fireman. *Fishkill Village, N. Y.*

THE HOT-WATER CURE.

BY H.

In the fall of 1883, I procured a set of about two dozen new Chrysanthemums. They were soon covered with a small, almost black aphis or plant louse that I had never seen before. My man smoked the house with little benefit; only reducing the number, but not exterminating the

race. Three days later he thought he would give them a "big smoke," that would "lay out" the black pests. So, unknown to me, he used about three times as much tobacco as usual, and when I examined the house next morning, I found that most of the insects had been killed, and besides, my bed of smilax that filled one side of the house was ruined. It was growing rapidly, was soft, and easily injured.

My next trouble was soon developed, when I found the dark aphis had escaped into a long bench of single violets. Then they must be put down and kept down, or I should have no flowers. Had tried tobacco and failed; did not like to resort to petroleum lest my plants should be killed. Next we resorted to hot water. Had it drawn from the boiler, and after adjusting the temperature to 130°, we thoroughly covered the violets with it, using the syringe. Watered them in the same manner, all the plants needed, for two or three weeks. The result was, the insects were killed, the plants started into healthy growth, and flowered finely.

This experience of a novice has several lessons: 1st. Growing plants will not bear much smoke. 2d. Water at 130° will kill small insect enemies. 3d. Hot water applied to the roots of growing plants is beneficial in cold winter weather.

Washington Heights, Ill.

PAINT FOR HOT-WATER PIPES.

BY READER.

Why do not the "victims" of gas tar use lampblack and linseed oil mixed to the consistency of paint, for painting their hot-water pipes? It will prevent rust and improve the looks of the pipes without injury to plant or foliage. Certainly gas tar will not do more. After the preparation has thoroughly dried, a going over once a fortnight of the exposed portions of the pipes with cotton waste saturated with oil will brighten them up like new.

Berwyn, Pa.

GHIESBREGHT'S SERICOGRAPHIS.

BY CHARLES E. PARNELL.

Sericographis Ghiesbreghtiana is a very pretty and valuable winter flowering warm greenhouse plant, belonging to the natural order Acanthaceæ. It is a shrub of dwarf growth, attaining a height of from one and a half to two feet, with smooth stems and opposite oblong lanceolate undulated dark green leaves, on short petioles producing its bright scarlet colored flowers, in small, loose, one-sided panicles, in the greatest profusion during the months of January and February; and on this account is a very desirable addition to any collection of stove or greenhouse plants. The individual flowers are from one and a half to two inches in length. This Sericographis is a plant that can be easily cultivated. It thrives best in a compost of two-thirds well rotted sods, and one-third well decayed manure; and as it is a plant of robust growth, it should be given a good share of pot room. Be careful to drain the pot well, and during its season of growth give liquid manure water freely. During the winter season it should be given a light sunny situation, and an average temperature of 55° with a liberal supply of water; but when it has ceased, a limited supply of water and a lower temperature will be more suitable. In the summer season the plants should be planted out in a well enriched, deep border; care being taken as to watering during dry weather, and at such times I have found a mulch of coarse littery manure to be of the greatest advantage, not only to this, but to many other greenhouse plants. When grown under glass it is very subject to the attacks of two very troublesome insects, the mealy bug and red spider, so that care is necessary to keep them in subjection. On this account the plants should be freely and frequently syringed. Propagation is effected by cuttings of the young wood placed in sand, and given a gentle bottom heat. If the young plants are liberally treated and shifted as often as necessary, nice flowering specimens will soon be obtained. Its native country is unknown, and nothing is known with certainty of its history, excepting this, that in 1846 Messrs. Rollison, of Tooting, England, received it from M. Mackoy, a Belgian nurseryman, under the name of Aphelandra Ghiesbrieghtiana.

Queens, L. I., New York.

REMOVING GAS TAR FROM HOT-WATER PIPES.

BY A NEW JERSEY CORRESPONDENT.

Although I have not been troubled with gas tar on my pipes at any time, yet, from my knowledge of gas tar in many experiments, I know the cure. If a thick coat of whitewash of lime be put on, after scraping off with a knife all it is possible to, then the lime absorbs all the rest, and if one coat will not do it two or three surely will. It may be found necessary to rub off each coat if much blackened. The lime has a great affinity for the tar and will absorb it all out, unless it (the tar) is put on the inside; then this plan will not do. There is no need whatever, in my opinion, to take down the pipes if the gas tar is only on the outside.

THE CYCLAMEN.

BY W. C.

How seldom we find this plant, in the greenhouses of to-day, grown as it should be. I think it one of the best plants for decorating a conservatory or greenhouse, and for a window plant it has no equal to my knowledge, also for cut flowers. The soil best suited to the Cyclamen is a compost of good turfy loam three parts, leaf-soil and old rotten cow manure one part each, with sand enough to keep the compost from becoming sodden. For my part I prefer seedlings to old bulbs. I sow the seed in February in well-drained pans placed in a propagating bed, well shaded until the plants are up, then remove the shade gradually, and when the plants are hard enough place them on a shelf close to the glass. When the bulbs get as large as peas, pot into 3-inch pots, place again in propagating bed with a sash over them to keep close, also shade for a time until established, then place again near the glass. As soon as the weather will permit remove into a cold frame to harden ready for planting out. About June 1st, or when all danger from frost is gone, plant out about one foot apart in a border. If the ground is naturally stiff, a little sand and leaf soil will be a benefit (as they do not like a stiff soil). Care should be taken to keep the surface soil clear of weeds and well loosened up; also, should the weather be dry, a good watering once or twice a week will be needed, the object being to keep the plants growing all summer. About September 15th lift the plants and pot into well drained pots—six or seven-inch is the best size; place in a cold frame and shade for a few days; here they may remain until the nights begin to get too cold for them, when they may be removed into a light, airy greenhouse, keeping the plants as near the glass as possible. The temperature best suited is 50° to 55° by night, 60° to 75° by day; the latter temperature with bright sun and considerable air.

Bay View, Mass.

PROPAGATING PLANTS.

BY MRS. J. S. R. THOMSON.

I with many other amateurs have felt the need greatly of a rapid means of propagating what plants we wish to increase; and the need has become more urgent since we have established a bureau of exchange. We by this means add so easily to a small collection that, now we once know and appreciate it, will not be easily induced to give it up. I have a large cold pit to winter over my plants in, with never the hope of having flowers during the winter, as I have no means of heating it, and (often as this, for instance, which has been unprecedentedly cold with us) congratulate myself on saving them alive to bloom during the summer season. I am contemplating a change though in said pit—to heat—and I am consulting with a noted florist to see if my plan is feasible. But in the meantime our season for propagating many plants is almost upon us, and I have, I believe, hit upon an idea that if it will work and become known, I will be considered a public benefactor by my amateur sisterhood. I give you my idea, and ask in all simplicity, do you think it will work? I have an ordinary kerosene stove with attachments thereto usual to them—a baker for one—which I propose being one of my accessories to my propagating apparatus. 1st, I intend to fill an iron baking pan, 3 inches deep 14x18 inches, with clean white sand, and in this place closely my slips or cuttings. 2d, light the fire, place my baker in its usual place, and within that as deep a boiler as it will accommodate, filled with water, closing the door of the baker upon it; then on top of this baker I propose setting this pan of cuttings, and I think the boiling water, generating steam, on escaping around and under the pan will give me just any temperature I may desire, by regulating it with the little rachet wheels to turn up flame or lower it, by putting in a thermometer in the sand and keeping sand sopping wet. Why have I not a means of rapidly increasing all my plants—those that require great heat and those that like little? I would feel exceedingly obliged if you would give me your opinion of my plan. I have not one practical scientific idea, but I believe this will work.

Spartanburg, S. C.

[This is a very good suggestion, and the apparatus will no doubt work very well.

There is, however, one thing which may be said about this propagating subject, that the more experience one gets the simpler the art of propagation is found to be, till in time we find that we need scarcely any apparatus at all. Two or three generations ago propagation was thought to be a great mystery; only a few had the hidden secrets revealed to them. In some of the famous nurseries of the Old World the propagating department was surrounded by a high wall like a prison,

and only the propagator and his assistants ever allowed to enter. These assistants had to pay a round sum for initiation into the mysteries of this sacred place, and of course it was not necessary under these circumstances for the chief propagator to put his finger on his lip, or to wink his eye. They were interested in keeping the secrets that flourished only within the walls. With the era of magazine literature, however, the wonderful processes leaked out, and bell glasses, hand glasses, various colored glasses, silver sand and other wonderfully colored sands, hot-water pipes, hot-water tanks, hot chambers, and no end of contrivances, were illustrated and described; and we often look back to even so recent a time as the early volumes of our own magazine in amazement at the many wonderful contrivances for successful propagation. In these days nurserymen employ even the most thick-headed boys in grafting, budding and cutting making. A backwoodsman with a hatchet can graft a tree as well as an old professional with a five-dollar grafting outfit. Boxes of sandy mush set in the full sun, root soft wooded cuttings as well as any old-time forcing pit; and when we look at our boxes of rooted heath cuttings stuck in by a boy who hardly knows how to read, and remember the time we had with them when we hardly dared to speak of them except as Ericas, we really think the world moves.

As a practical hint in propagating, we may make room for one leading principle here: Full light is opposed to the rooting impulse of a plant. Roots are formed under ground, in the darkness. Wood formed in partial light will root easier than wood formed in full light. For this reason those who propose to strike cuttings grow their plants first in partial light. A rose grown under glass will give cuttings that strike easily; cuttings from out-door roses root with difficulty. We learn from all this the kind of wood to be used for cuttings is of much more importance than any method of heating or of treating them.—Ed. G. M.]

SCRAPS AND QUERIES.

Insects on Roses and Carnations.—"Mrs. G. R.," Pemberton, N. J., writes: "Your remarks on page 31 of the January number of the Gardeners' Monthly, give me courage to write you on a subject in which I am much interested. I send you with this mail a tin box containing a small bunch of yellow cocoons, from which little black flies are hatching. I inclose with it some of the flies that have hatched, and I have reason to think that some of them will be alive when it reaches you, as a number of them have lived 405 days in my incubator, which is an inverted tumbler on the mantel, back of the stove. A friend has just told me that she found in a work on entomology, a description answering to this insect, and it said the little black fly destroyed the cabbage worm. We found a great number of these cocoons on the under side of the leaves of our Carnation plants, when we took them in the greenhouse last fall. I shall be under great obligations to you if you will tell me what they are, and whether they are friends or enemies; and I would like very much to know if they have any connection with the common brown grub that does so much damage in the spring. They cut off hundreds of our Carnations and other plants last spring. At that time I brought two of them in the house and placed them in a pan of soil; after they had been there a number of days, one of them showed great uneasiness, as if trying to escape from the pan; then I was called away for fifteen or twenty minutes, and when I looked again the grub had shrunk to one-third its former size, and close by it lay a bunch of what looked like yellow silk floss, and squirming all through it a great number of tiny white grubs. Now I cannot say that the flies gave birth to those little grubs and the floss that enveloped them, as I did not see the action, but it is the only way in which I can account for their being there. The grub died in a short time; the other grub went into the chrysalis state and finally got destroyed. It seems improbable to me that there is any connection in the two or three forms of insect life that I have mentioned. I give you the facts as they have come under my observation, hoping you will give me some light on the subject, which I earnestly desire, and which is my only apology for writing you such a long letter I have also fifteen katy-did eggs in my incubator which have not hatched yet. I am very curious to see what they will develop."

[There were no signs of black flies in the box. The cocoons seem to belong to Apanteles, a class of Microgasters, that are friends rather than enemies. The grub that is often so destructive to the roots of flowers is generally the larvæ of the May Beetle, and we know of no other that is so destructive. It is said that a little earth taken away around each plant and a little salt placed therein, will kill these grubs; but salt in an overdose will kill the plants as well. Just how much salt to employ must be a matter of careful experiment. Lime water destroys some of these terrestrial creatures without injuring the plants, and it may be of service as against this enemy.—Ed. G. M.]

Cause of Mildew on Roses and Other Plants.—"Rose Grower" says: "I note in the Gardeners' Monthly remedies for the cure of mildew. Is anything known of its cause and prevention?"

[Under the name of mildew we are speaking of small funguses. These, like the whole mushroom family, only grow when there are combined moisture and a degree of heat just suited to them. They seem to require exact conditions for growth to a fine point not required by a higher order of vegetation. We may for instance expose a piece of bread to the weather. If it get wet and the temperature is but a few degrees above freezing point, no fungus at once appears. If the temperature be above 50°, no fungus appears; at least not the cob-webby form which is so destructive to vegetation. But if the temperature be about the dew point, the bread will be found as soon as the dew is off completely covered with a fine silky organism. It was the exact temperature in connection with the moisture that induced the rapid fungous growth. Now in rose culture few are troubled by mildew when a temperature of 55° is steadily maintained in connection with the humidity of the atmosphere. If a draft of cool air be admitted so as to suddenly alter the hygrometric conditions, or the temperature in connection therewith, mildew may follow. Sulphur applications may kill it after it has started.

But the conditions of the plant may favor the growth. There is no doubt now but mildews will attack perfectly healthy vegetation, but it is also true that they prefer that which is either dead or with low vital power to that which is strong and vigorous. The weakest leaves are the first attacked. It is therefore wise in the rose grower to study those laws of health related to roses or other plants. A large number of rose growers have plants that by bad treatment are under low vital conditions, and these are unquestionably more liable to mildew than perfectly healthy plants. The average rose grower knows very little about the laws of health as applied to the plants he grows.—Ed. G. M.]

Greenhouse Flues.—"D. B. C.," Dubois, Pa., writes: "I have built a new greenhouse which I want to heat by flue. Would you be kind enough to inform me what sized grate to use, and also the size of drain pipe for a house 20x50? Is there any way to clean those flues besides brushing them out? Is there any chemical process for cleaning them? The flue I have in use now is only to heat a small house, and I find it very difficult to keep clean."

[Eighteen or twenty inch bars ought to be enough for a grate for such a house. Ordinary drain pipe is vitrified or glazed. We have not found these as good as the unglazed ones, and we find those made of fire clay superior. For your house one with a six-inch bore would do but for the soot from bituminous coal choking it so soon. Eight inches would be better.

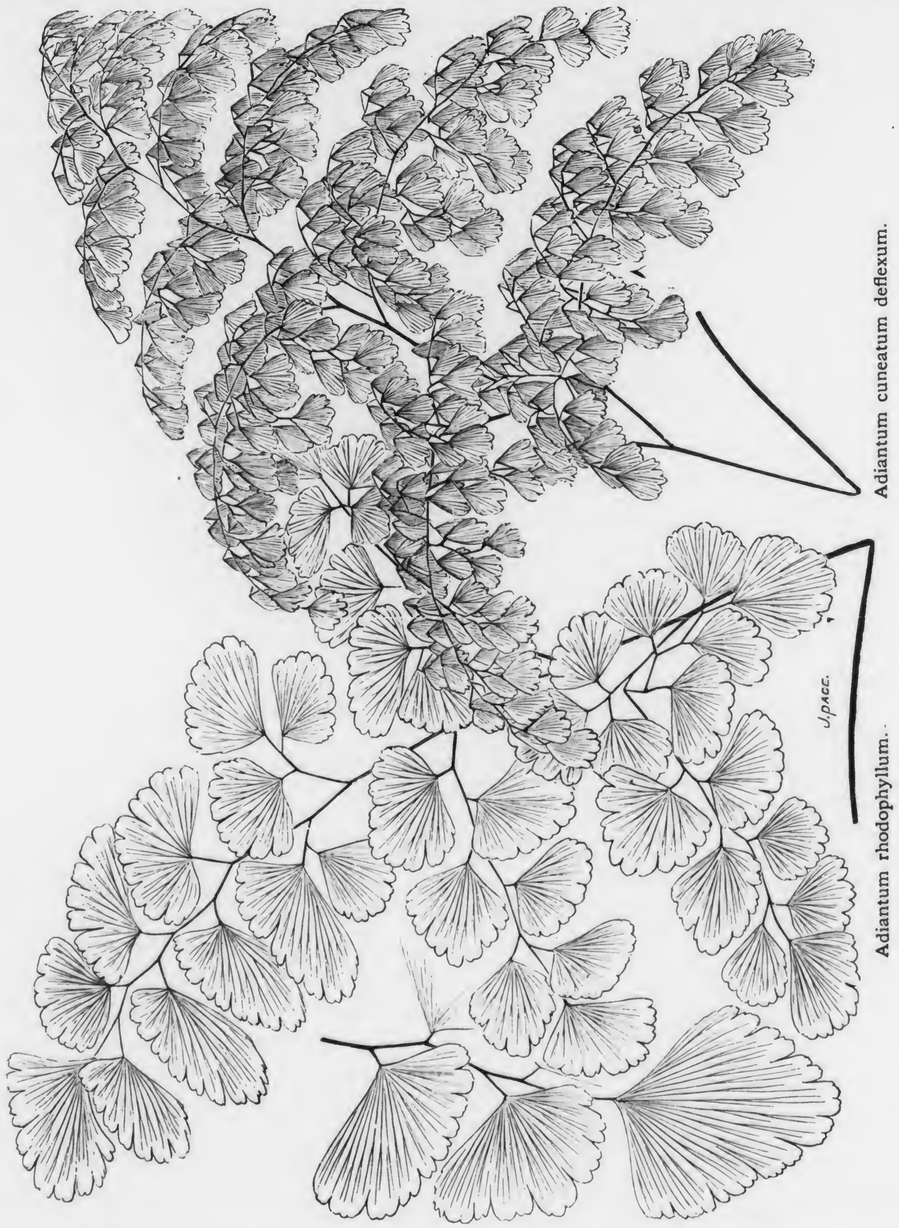
There is no chemical that we know of to clean these flues. In our case we had a moveable collar made for a number of sections. In this way a section here and there can be wholly taken out, and the rest easily cleaned. These collars must have a piece of wire fastened around them, or they will break when being filled with mortar, clay, or whatever may be used to close the joints. Wire should also be put around each piece of pipe to guard against the escape of gas should any one crack. The writer has had such pipes in a house for twenty years without renewing a single section, and working entirely to satisfaction.—Ed. G. M.]

Double Oxalis.—D. R. Woods, New Brighton, Pa., writes:—"In reply to your correspondent on p. 43, February number Gardeners' Monthly, would say Oxalis lutea plena is a desirable bulb. Its flowers are very double, but do not exceed three-quarters of an inch in diameter. In regard to lutea plena being the correct name we do not know. The one to which we refer we first saw noted in the list of a Pennsylvania florist, and believing it was new we sent an order for all he had of it. We have grown hundreds of it during the past two years and are highly pleased with it, both as a basket and pot plant. By referring to 'Rand's Book of Bulbs,' published in 1866, we find a double yellow Oxalis mentioned therein. This may or may not be the same. The Editor is correct in saying 'it would look like a very small dandelion,' nevertheless when in full bloom it is very pretty."

NEW OR RARE PLANTS.

New Varieties of Ferns.—It makes little difference to a lover of plants whether the little beauty he admires is what a botanist calls a species, or only a variety. If they are distinct and lovely it is all the same. The two we now illustrate are

Maiden Hair Ferns, that have been raised by florists, but are as well worthy of admiration as have introduced them to the commercial world, furnish us with the following account of them:



some of the undoubted species brought thousands of miles from foreign lands.

Messrs. Veitch, of Chelsea, near London, who

"*Adiantum cuneatum deflexum.*—This neat little evergreen fern was raised by Mr. Bause, of Morland Nursery, South Norwood, from whom we have acquired the stock. The following is from Mr. Moore's description published in the *Gardeners' Chronicle* for December 8th, 1883. 'This goes far to support the ideas of those who believe in the crossing of ferns, whether the process is truly described by the term hybridization or not. It was raised between A. cuneatum and A. Bausei, the latter also a so-called hybrid fern. The characteristics of the two sorts are unmistakeably blended in the new form which has the densely fronded stocky growth of A. cuneatum with its spreading fronds and cuneate pinnules, with the singularly deflexed pinnules of A. Bausei; this hanging position of the pinnules gives the plant a very distinct appearance. The plants are dense and compact in growth, on which account they are well adapted for grouping in small baskets and jardinettes. Their bright and cheerful green color adds much to its value as a decorative fern.'

"*Adiantum rhodophyllum.*—A most distinct and beautiful Maiden Hair Fern allied to Adiantum scutum, also raised by Mr. Bause, from whom we have acquired the entire stock. It is far superior to A. scutum in its ornamental qualities. The fronds are densely crowded and attain a height of 15 to 18 inches; the stipes are very slender and erect; the leafy portion of the frond is bipinnate, deltoid in outline, and spreading. When first developed the young pinnules are crimson; they gradually change with age to a rosy fulvous green and finally to a soft pale green. In form the pinnules are fan-shaped, truncate on the basal side, very finely dentate and split on the outer margin; when mature they are an inch and a half across.

"The remarkable diversity of colors presented by the pinnules at different stages of their growth, and which are all to be seen on the plant at the same time, renders this Adiantum one of the most effective decorative ferns yet offered. To this striking characteristic must also be added the compact habit of the plant and the elegant contour of its tufted fronds. First-class Certificate from Royal Horticultural Society and Certificate of Merit from the Royal Botanical Society."

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

THE FRUIT OF THE JAPAN QUINCE.

BY. GEN. NOBLE.

We welcome the "utile cum dulce," when it is the honest boast of any plant of floral loveliness. The mass of blooming plants yield us only their fragrance and flowers. Of ornamental shrubs, I think only the Berberry and Japan Quince, give us a fruit that stores the promise of usefulness.

Only lately has the Japan Quince, beyond a theory, seemed prophetic of fitness for the table as a conserve. Its round, plump, and enduring fruit, has for years wasted on the ground, or been gathered into the rubbish pile. Yet all the while there have been floating rumors of its deserving a better fate. Years since, I reported to your journal a story of its tried excellence for jellies and jams. Among other rumors of its use in the household, came one from friends of that princess of housewives, Mrs. H. W. Beecher. It was said that she had tried, and prized this quince, as a great culinary acquisition.

I am now able to say, from my own sight and taste, that it makes a finer jelly, and as pleasant a marmalade, as the Orange Quince. The jelly is strongly acid, and of the most delicate tinge and transparency. The marmalade from it is of much lighter hue, and finer grain, than that of the common quince.

It requires only the simplest treatment. Anyone who can jelly any fruit, can succeed with this. Just so as to the marmalade. Although so hard in substance, the fruit softens easily when cooked. Besides these merits, the Japan Quince has no worm-eaten fruits; all are smooth and fair, unblemished by the worm-favors so annoying in the old cultivated kinds.

The variety of this shrub with cherry colored blossoms, or that with pink and white blossoms, yields the finest, largest, best flavored, and most pulpy fruits.

A plantation of this quince, set as closely as it will flourish, would yield a very profitable crop for a canning concern. It is a sure crop, has no windfalls, does not rot, does not shrivel, and stands the colds and frosts well up to winter.

This quince grows about as large as the Guava shrub; its raw fruit is to the taste, full as pleasant as the Guava. I hope to see it as largely used.

Bridgeport, Conn.

THE FOREIGN GOOSEBERRY.

BY BENJ. G. SMITH.

If cultivators knew how easily a crop of Foreign Gooseberries can be produced, I think they would be inclined to try them. I have cultivated English Gooseberries, the past eight or ten years with uniform success, and have had no more difficulty in securing abundant crops than from American varieties. Have received first prize from Massachusetts Horticultural Society, the past eight years. English Gooseberries do not like our mid-summer scorching sun. I therefore secured a location where they received morning sun until about ten, and afternoon three and a half to sundown. Our soil, originally stiff clay, is underdrained and subsoiled to depth of twenty-four to thirty inches, with plenty of sand and cow manure added. I am convinced the very best fertilizer for the gooseberry is cow manure, supplied liberally, as it is a gross feeder. My practice has been to prune severely, and thin out half or two-thirds of the fruit. We give annually in early autumn, a heavy dressing of cow manure. As you know, Mr. Editor, the Foreign Gooseberry in England will stand neglect, and produce satisfactorily, but not so in New England. We must here regard its requirements and give it necessary attention, and I believe success will be secured.

Cambridge, Mass.

WIRE AS A PLANT SUPPORT.

BY T. BENNETT.

Your note on "Lima Beans Without Poles," in the February number of the MONTHLY, has induced me to make a few remarks on the various uses to which wire may be applied for gardening purposes, as a support to plants. Also to give my own experience in the matter.

Wire in its various kinds and multifarious uses, seems to have become not only a local, but a national blessing; and it seems might be much more generally utilized for gardening purposes. It might be more used for flowering vines and ornamental work, as well as for grape vines.

I have grown Lima beans on upright threads between two horizontal wires for several years, and found it a very good plan, and can recommend it where poles are scarce; not only in gardening, but for field culture also. Eight or nine inches apart between the threads is better than eighteen, and about six feet high to the top wire is enough.

By topping the vines at the upper wire they will bear to the ground, and under ordinary circumstances yield a most abundant crop. One vine to each thread is enough. We cannot have too many Lima beans. They are an excellent vegetable, will keep the year round, and may be had green in their pods all winter, by picking off while yet a little green, and spread thinly on a loft or attic, or laid on shelves; this retains their summer flavor.

I believe hops can be grown the same way advantageously by raising the top wire about three feet more than for beans, or about nine feet high. They should also be topped when the vine reaches the upper wire.

Peas grow well on two or three wires stretched along the rows, fastened at intervals to short stakes; and even one wire is preferable to letting them lie on the ground, and will greatly increase and improve the crop.

Tomatoes are also very much improved by some support of this kind, and in fact wire should be more generally utilized for gardening purposes.

For the benefit of the readers of the MONTHLY, I have visited the great wire establishment of Cooper, Hewitt & Co., Trenton, N. J., to learn the prices of the different sizes and grades of wire adapted to these purposes; and by the courtesy of one of the firm, Mr. W. Hewitt, was shown over that vast establishment. I saw many of the numerous processes of wire making; drawing and reducing down to the size of a hair; one pound weight of which is capable of extending over a distance of more than two miles. I learned also from that gentleman, that two wires wrapped together, instead of one, are better for every kind of trellis work where a strain is required, as the expansion and contraction from heat and cold, by this means affects only the wrapping and not the metal; thus preventing breakage by contraction; and these two twisted wires may be had for little more than the price of one single piece, which is a double advantage. I also found these gentlemen have invented and for sale, cheap wire trellises for peas, tomatoes, &c., as well as for other kinds of ornamental fencing, each sort having four or five double wires twisted around laths and stakes, and which can be made and formed to suit any purpose; and the former can be bought for about 2½ to 3 cents the running foot, which is very cheap, and they look neat and tidy. Can be rolled up and stowed away in winter, and will last many years.

What they call double wire cable No. 14 costs about seven cents a pound and will stretch about twenty-nine feet, so that a person may calculate beforehand what it will cost to wire his crop for field or garden.

By getting galvanized wire it will last a long time and save the trouble of painting. Indeed, galvanized wire is the only kind to use for garden purposes.

Now suppose we calculate the cost of an acre of Lima beans, for the sake of comparison: A square acre is about 69½ yards on each side, and with poles placed 3x4½ feet apart will take 3,226; and good cedar poles will cost at least 3 cents each, which amounts to $96.78. Now two double wires stretched over the same distance 4½ feet apart would take 661 lbs., and at 7 cents (the highest figure) would cost $46.27. Or, suppose we do not plant so close and place the poles 4x4 feet apart, this would take 2,723, and at the same price, 3 cents, amount to $81.69. Two double wires placed 5 feet apart would take 589 lbs., and at 7 cents cost $41.23.

Posts, staples and thread will cost something, but I consider the extra labor of putting down and taking up the poles offsets that cost, and I think the wire bears the most for the whole line is covered.

Accordingly, wire costs about one-half, or, as in the first calculation, a little less than half the price of poles, even supposing they could be procured easily and purchased cheaply.

Chambersburg, Trenton, N. J.

[Our readers will we are sure unite with us in giving thanks to Mr. Bennett for this excellent practical as well as suggestive communication. There is no doubt but wire might be used with excellent economy in many cases now seldom thought of. In field culture there will yet be one item in favor of poles for hops and beans, wherever they can be easily obtained, namely, the ease with which a horse can work the hoe and harrow both ways; but this may be obviated by having horizontal wires at the regular pole distances, and strings from the wires to the ground when poles are scarce.—Ed. G. M.]

EDITORIAL NOTES.

VEGETATION UNDER ORCHARD TREES.—At the recent meeting of the New York Horticultural Society, the everlasting topic of surface management in orchards, was of course warmly discussed—discussed warmly on both sides, says the report.

And yet it is a very simple question in the light of all that has been adduced during the last quarter of a century. It is nothing more than this: The feeding roots of trees are the small annual fibres. These love to be as near the surface as they can get, providing the temperature be not too high, food and moisture be abundant, and an absence of light. Sometimes these conditions will be best secured by a clean surface; sometimes by keeping the surface shady by vegetation. We have to penetrate into this question much deeper than the grass that covers it. An orchard in grass affords the comparative coolness required by the roots, the shade which they love, and permits, by the shade, the roots to get nearer the surface than when growing in the full light which the bare ground provides. But where food and moisture are scarce, the advantages are counterbalanced. Food and moisture are the first essentials of all good culture. A clear surface, or a surface devoted to other crops, is a secondary question.

UNIFORMITY IN APPLE BARRELS.—At the meeting of the Western New York Horticultural Society, a committee consisting of Julius Harris, H. T. Brooks and C. M. Hooker appointed at the last annual meeting to ascertain the dimensions of a 100-quart apple barrel, then presented a report. The committee recommended the use of a barrel made of staves 28¼ inches long, heads 17 inches in diameter, with the bulge 64 inches in circumference on the outside, holding 106 quarts of wheat by actual measurement, and when shook down 111 quarts; this being the size of the common flour barrel now in use.

PRICES OF FRUIT IN ROCHESTER IN 1884.—Mr. Charles M. Hooker, at a recent meeting of the Western New York Horticultural Society stated that the past season was one of very great abundance in the production of nearly all varieties of fruits in Monroe county, and we think never before were our markets so well supplied with fine fruit of all kinds at such moderate prices. Dealers in Rochester paid about as follows for good fruit: Strawberries, 6 to 8 cents per quart; black raspberries, 6 to 8 cents; red, 10 to 14 cents; blackberries, 9 to 12 cents; currants, 4 to 6 cents per pound; grapes, 3 to 5 cents per pound; peaches, $1 to $1.50 per basket; plums—Lombard, Monroe Egg and Common Blue sorts, 75 cents to $1 per

bushel; prunes, $2 to $2.50 per bushel; Renie Claude de Bavay, $1.50; Bradshaw, $1.50 to $2; quinces, $2 to $4 per barrel; pears—Bartlett, $4 to $6; Duchess and Seckel, $3 to $5; apples, $1.25 per barrel.

PRODUCT PER ACRE OF STRAWBERRIES IN WESTERN NEW YORK.—Mr. C. M. Hooker says that in 1884 strawberries produced a wonderful crop. Never before was so heavy a crop grown here—6,000 to 8,000 quarts per acre not being uncommon. The usual average in previous seasons not being over 2,000 quarts per acre. This great production arose doubtless from a very favorable growth of the plants in the fall of 1883, the plants coming through the past winter in good condition, and frequent rains during the growth and ripening of the fruit. Prices were very low.

CURE FOR GRAPE VINE MILDEW.—Prof. Caldwell told the recent meeting of the Western New York Horticultural Society that it has been discovered that mildew can be prevented by soaking the stakes on which the vines twine in a solution of blue vitriol. These stakes were mixed with others not soaked, through the vineyard, and in every case where not soaked all the leaves were entirely ruined, while those on the soaked stakes were healthy. A weaker solution of the vitriol was not so effective. The effect of the soaking gradually dies out, but will last from four to six years.

THE JAPAN PLUM.—This is being largely planted in California. This is a real plum. The Japan plum of the Southern Atlantic portion of the United States is a kind of Medlar, Mespilus Japonica.

EXPERIENCE IN GARDENING.—After the Pilgrims landed at Plymouth, Massachusetts, they wrote home their experiences. The pea was pronounced a total failure in the New World. They planted of course in the time of year they had been accustomed to plant. But in a few years after they wrote to the old folks at home of their wonderful success with many vegetables, and then we find the pea in this wonderful list of success.

SCRAPS AND QUERIES.

INSECT INJURIOUS TO THE TOMATO.—A Vineland correspondent says: "I have taken the liberty to send you, by express (paid), a paper package that contains a specimen of what may perhaps be called the club-root in a greenhouse tomato-plant; the cause of which I would like to ascertain, and I know of no one more likely to be able to give information on such a subject or more likely to be interested in its investigation than yourself.

"We have raised winter tomatoes successfully several years in our greenhouses, the only serious difficulty we have had to contend with being mildew. Last year there was some of the club-root in the houses; this year there is a great abundance of it. Several queries have arisen in my mind in relation to this disease, whether the excessive mildew this year may have been the cause of the disease, or the disease the cause of the mildew; or whether the disease may be owing to too much or too little enriching, or to the kind of enriching; or whether the soil may not have been poisoned by growing in it the same kind of plant several years in succession; or whether an insect may have had something to do with it. The manure used has been principally stable manure, but, perhaps, not enough of it, or not sufficiently rotted. The soil is naturally a sandy loam.

"We raise, in the same houses, Black Hamburgh grapes, the roots of which run below those of the tomatoes.

"Any information as to the probable cause and the possible remedy of the disease referred to will be very thankfully received."

[The roots were knotted like strings of beads about the size of peas. There is no relation to club root, which is the work of a fungus. It is the work of an insect, and they are indeed galls. By cutting across the excresences, squeezing a little, and examining with a pocket lens, a number of transparent eggs about the size of pin heads are seen to have emerged. These eggs have of course to remain here till they hatch, become larvæ and enter the pupa stage. It ought not to be difficult to destroy the whole race by taking out the roots of the tomatoes carefully some time before the creatures leave them, and burn. It would also be a benefit to remove as much earth as possible and replace with fresh.

From this letter and a large number of others we have received during the past few years it is surprising how many people try to get along without a pocket lens. Gall insects that operate on roots are very common, and in a large number of cases sent to us, if people would only cut open and examine, they would see the "cause" for themselves.—Ed. G. M.]

FORESTRY.

EDITORIAL NOTES.

SILK CULTURE IN FRANCE.—For some reason silk culture has fallen off considerably in France. The most remarkable feature of the decreased product is that prices have also fallen with decreased production. It would seem to show either, that there is not the same demand for silk as there once was, or else that the competition from other countries has driven the French from the world's market.

MAHALEB CHERRY AS A TIMBER TREE.—THE *Bullettino della R. Soc. Toscana di Orticultura* says this tree grows spontaneously on the calcareous hills near Vienna, and is extensively cultivated in Austria, Bohemia and Hungary. It is much valued for its timber, which has not only a pleasing tint of color, but gives out a delicate and agreeable odor.

CANADA AND THE TIMBER DUTIES.—A Canadian essay on the decrease of the forests of the United States, is fairly blotted with the tears of the author, over the impending ruin to our country when the timber is all cut away. He thinks it would be much more to the interests of the United States to save their own forests, let the timber come freely from Canada, and let that country become the "dreary waste" from which the United States will be happily safe. All this great blessing will follow by the United States taking off the timber duties. He innocently adds, (this part being intended probably to bring out the Canadian shekels in favor of free trade documents,) "should the reduction of duty be made the Canadian government will be a great gainer if an additional tax be placed on the right to cut timber from the Government lands."

FORESTRY IN THE OLD WORLD.—We are very apt to wonder why it is that so much is done ignorantly in our country, when the old world gets the best skill—the right men for the right places. But the truth is they do no better than we. Mr. Grigor, a noted authority on Scotch arboriculture, gives a deplorable account of the losses through ignorance of employees, as well as of owners. It is not long, he says, before the 49,000 acres, recently planted in the New Forest, will be a worthless barren heath. Intending to plant Norway spruce, another large owner found he had the comparatively worthless White spruce; and another planter, for Scotch pine, set out some hundreds of acres of the Dwarf Mountain pine, Pinus pumilio, and no doubt wondered why they did not start and grow. Trees natural to moist soils are set out on dry ones, and dry-ground trees are set in swamps and morasses. It cannot be much worse than this in America.

RAIN-FALL IN ENGLAND.—England is a moist country through the atmosphere carrying so much vapor, but the rain-fall is not remarkable; it is very irregular but never large. A correspondent of the *Gardeners' Magazine*, at Reigate, gives the fall in 1883, from January 1st to December 1st, 30.40 inches; 1884, in same time, 19.49. This is less than Philadelphia, which in an average of ten years is about 41.00.

PRESERVING RAILROAD TIES.—It is at length found that it is profitable to creosote railroad ties in Europe, and large establishments for the purpose of so preserving them are getting common. In our country where we burn thousands of acres of timber annually, ties are yet too cheap to lead railroad men to think of it.

ENCOURAGING FORESTRY IN PENNSYLVANIA.—The Editor of this magazine, as an honorary member of the State Board of Agriculture of Pennsylvania, has continually pressed on that body the folly of any legislation looking to the "Preservation of the old forests." They are but receptacles of dead brush, and the great cause of our terrific forest fires. Old trees are not of much use as timber after they are a hundred years old; in most cases they are on the decline. The sooner the ground is cleared of them and planted with new material the better. The true forestry question lies in the encouragement of new forests.

At length it seems some one has thought there is something in it, and, to encourage new planting, a bill has been introduced, and at this writing has passed the Senate, establishing two nurseries in the State to raise forest seedlings, and give the plants away to those who will plant them "near streams or the head waters of our rivers."

It seems mortifying that a good idea should be rendered ridiculous in this way. Any nurseryman

could raise forest tree seedlings ninety per cent. cheaper than any government can do it by nurseries. Contracts would be gladly entered into that would furnish the State with all they wanted to distribute for but a tithe of what this State nursery plan will cost, with its chief, its assistant chiefs, clerks, superintendents, packers, and so forth. It might be said that the Editor of this being a nurseryman will naturally be opposed to this free gift scheme. Nothing of this sort. No such scheme ever hurt a nurseryman, for the man who looks to get things for nothing would never buy. On the contrary, it will rather help the nurseryman's business, as the intelligent nurseryman would beat the ignorance of the State officials every time, and the better class of free recipients would be the nurseryman's friend at last.

Not then from any trade prejudice, but from utter disgust at these scandalous wastes of public money, we enter our protests against them. We shall get no more forestry planting under this free gift plan, than we got tea orchards from the thousands distributed by the United States government a quarter of a century ago.

SCRAPS AND QUERIES.

RARE ROCKY MOUNTAIN FIRS AND PINES.—An Illinois correspondent says: "How few people know when they are well off. 'A rare lover of coniferæ' on page 4, January number of the MONTHLY, says, 'If I were a nurseryman and twenty years younger, I would get up a good stock of these two species of pine (P. flexilis and P. Murryana), because I believe they will become very popular when known.'

"It may be he would, but if he lives to be twenty years older than he is now, his views would change again. I invested in the first collections and was doubly happy one day by the news of the capture of Jefferson Davis and the first sight of my seedlings. Then I invested $60 more on the Rocky Mountain seeds. It is now twenty years ago, and I have not yet sold one tree of these species; but one of Pinus flexilis. Picea pungens, and P. Douglassii are growing in public estimation."

CONIFERÆ OF THE ROCKY MOUNTAINS.—"G. J. B." writes: "I saw in the MONTHLY for January, page 4, a few remarks in regard to the indigenous evergreens of the Rocky Mountains. Being a resident of Denver and greatly interested in the cultivation of our Rocky Mountain coniferæ, and having fair success in transplanting them from the mountains into the hot and dry atmosphere of Denver, would feel obliged to ascertain from your correspondent in what part of the Rockies he saw those attractive pines."

[The coniferæ within reach of our Denver correspondent would be Pinus ponderosa, P. flexilis, P. aristata, P. Banksiana, P. edulis, Abies Douglasii, A. pungens, A. concolor, and the eastern and western Red Cedars. Those named by our correspondent had reference to the "Rocky Mountains" several hundred miles south of Denver, and would be best obtained through seeds from the collectors.—Ed. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

SOIL ANALYSIS.

BY RUSTICUS.

I desire in this article to mention various examples of successful soil analyses, for the purpose of showing their utility. The logic of facts is irrefutable. Very many samples of soils are forwarded to the Department of Agriculture for analysis. Among others one from Saint Mary's county, Maryland. A water extract from this soil had acid reaction; it also gave decided reactions for sulphates and chlorides of iron, lime, magnesia, potash, soda. The extract amounted to 11.84 per cent. of the original soil. The soil showed a large amount of soluble iron salts. Even in small quantities they are injurious to vegetation. In this soil a free access of air was necessary, so that the soluble salts of iron should become insoluble and harmless. An analysis of peat muck from Louisiana gave 38 per cent. organic matter, principally carbonaceous, constituting it an excellent absorbent in composting stable manure. A sample of decomposing rock—shale—from Wisconsin, sent to the Department to ascertain its value as a fertilizer, showed it to be deficient as a fertilizer. I call special attention to the triumphant results of analyses of the "poison soils" of Texas. In Dallas county they are extensive. G. W. Danover writes: "All our soils for many miles in every direction are of the same character, 'poison soils.'" It exists in limited areas throughout the State, in every variety of soil; sometimes 50 acres of cotton on one plantation dies from the poisonous matters. Cotton, fruit trees and root vegetables disclose its presence. Top root vegetation is most liable to die. Trees die in one or two years. Root vegetables and cotton die and rot just before fully developing themselves. An ultimate analysis of the soil sent gave no sulphuric acid, or any of the sulphur compounds. Other details of the analysis demonstrated that these "poison soils" needed thorough underdrainage, to relieve the subsoil from saturation and for the free circulation of air; then to be subsoiled to bring it more fully under the influence of the air. A heavy dressing of quick lime, deeply plowed in, to take up and neutralize a large amount of humic acid, and so relieve other elements of plant food, locked up as insoluble humates. An application of gypsum also, to furnish sulphuric acid, so indispensable as a plant food. The money value of this analysis would be difficult to estimate. Says Prof. Kedzie: "In the early history of chemistry, analysis of certain barren soils revealed the cause of the barrenness in the sulphate of iron present. When this was removed or decomposed by lime, the soil was fruitful." In view of the triumphs of soil analysis so far achieved, I think we can entirely assent to the reasoning of Professor E. W. Hilgard, University of California: "If the agricultural chemist can do nothing to help the farmer in these important questions, his practical utility will be limited, indeed." And how is he ever to be able to render these services if he continues to ignore the chemical examination of the soils, upon the strength of the "non-possumus" pronounced by some high priests? The claim of soil analysis to practical utility has always been rested on the general supposition that, "other things being equal, productiveness is, or should be, sensibly proportioned to the amount of available plant food within reach of the roots during the period of plant's development; provided, of course, that such supply does not exceed the maximum of that which the plant can utilize, when the surplus simply remains inert." I think we should not admit the power and efficacy of analysis as applied to plants, animal bodies and vegetation, and ignore it as to soils.

TORPID VEGETATION.

BY R. DOUGLAS.

The GARDENERS' MONTHLY's article, "Can Plants Sleep for Centuries?" induces me to say a word on the longevity of trees in a dormant state.

I packed a box of 1000 catalpa trees purposely to test them. The trees were packed in dry moss, box lined with strong paper, the box put in a dry tool house during the summer, a board floor and three windows in a room the size of the house, 16x18 feet with outside door. They were put in this room to give them the most severe trial. Eighteen months after they had been dug we took out 25 trees and planted them; they grew apparently as well as any transplanted trees. Two months later I sent a bunch of them to the Nurserymen's Convention in Chicago last summer, when they had been up and dormant twenty months, and apparently their vitality was intact. Now why not you or some careful scientist bury some dormant trees in a nice dry sandy loam knoll, say 6 or 8 feet deep, where the ground would have just sufficient moisture to keep them from shrivelling and the earth compacted so that water could not reach them, and examine them in fifteen or twenty years? When you will be about my age, depend on it, you will be just as much interested in experiments as you are now; and especially, you should bury some seeds at the same time; they could not germinate at that depth, and I do not think they would rot. Try it.

Waukegan, Ills.

ECONOMIC USES IN NIGELLA DAMASCENA.

BY G.

Le Maout and Decaisne record that in South Germany and the Alps the seeds of Nigella are used in flavoring bread. The same thing once obtained in this country. My mother used to flavor a certain kind of cakes for us children with the seeds of N. damascena—that quaint old-time flower called "ragged lady," "devil-in-a-bush," or "love-in-a-mist." My recollection is that the taste of the cakes was excellent. The Nigella, however, belongs to an order which contains many poisonous plants. I would not care to eat its seeds very freely, even after baking.

CLOSE UNION OF DIFFERENT SPECIES OF TREES.

BY DR. CHAS. W. GREENE.

Your recent notices of the apparent union of trees of two widely different species recall the fact noted by Seemann in his "History of the Palms" (p. 105), that in India and Ceylon it is very common to see the trunk of a Banyan, or other Ficus, from which there shoots out a Palmyra palm. It is almost certain that the Ficus starts as an epiphyte upon the Palmyra, and sends down its tendrils to take root in the soil. In South Florida the same thing happens with a native Ficus, the seeds of which take root at first upon the bark of some other tree, precisely as the Banyan takes root upon the crown of the Palmyra. The Hindoos look with great reverence upon this apparent union of two trees of diverse habit.

I have occasionally in New England found a currant bush growing in the fork of some great chestnut or other tree, where dirt and decaying bark afforded it a slender subsistence. One occasionally finds a weed or brier growing in a decayed knot on the trunk of a tree. *Merchantville, N. J.*

EDITORIAL NOTES.

Weakened Vital Power Through Continuous Forcing.—Mr. Charles Henderson makes a good point in his essay on the carnation disease. We all know how it was with the grape a quarter of a century ago, when by the forcing process grape vines were tossed into the market by the million, with the result that nothing but the Concord became "hardy enough," and scarcely that one. Grape culture received a set back from these weak vines that took many years to recover from.

Immediate Influence of Pollen on Fruit.—At a recent meeting of the Academy of Natural Sciences, Mr. Thomas Meehan directed attention to an ear of Indian corn on the table, sent by Mr. Burnett Landreth, which had nearly all one side with brownish-red grain, the other side creamy white, which was the normal color of the variety. Usually the intermixture of colors which occasionally occurred in an ear of corn, is attributed to cross-fertilization. It is apparent that this could not be the case in this instance. The whole solid block is colored, and, at the edge of the colored mass, only half a grain would be colored in some instances. The coloring influence had evidently spread from some central point quite independent of any single grain, and had spread from grain to grain through the receptacle, until the coloring material was exhausted. In cross-fertilization, from the entangled position of the silk-like pistils, no such regularity of coloring in adjoining grains could occur. On reflection we may understand that at times color in corn must come from causes independent of cross-fertilization, as the departure in the first instance from one color, must be from an innate power to vary in color, independently of any pollenating influence.

The facts are interesting, as bearing on many topics as yet not wholly solved. Much has been said about the changes in nature being by slow modifications through long ages, but we have frequent instances of sudden leaps. There are no gradations between the colors of these grains. Again, it is in dispute how far cross-fertilization influences the seed. Generally no immediate influence is conceded, we have to wait till the seed grows, and we can examine the new plant to ascertain the potency of the several parents. So far corn has been the chief and almost the only evidence that the seed or its surroundings are immediately affected; but recently statements have been made that the receptacle in the strawberry—what we know in every-day life as the strawberry—is similarly influenced. There are some varieties wholly pistillate, and it is claimed that when pollen is applied from other varieties, the resultant fruit is that of the male parent. It is of great practical importance that such a question should be decided by undoubted facts. Experience in other directions does not confirm these views. The Mitchella repens is really a dioecious plant. Many years ago he found one plant with white berries, and removed some portion to his own grounds, where, isolated from others, it produces no fruit. In its native location it bears white berries freely, though the pollen is from the original scarlet berried forms. Mr. Jackson Dawson had given him a similar case on Prof. Sargent's grounds, where a white berried Prinos verticillatus is produced, though it must have pollen from the original red berried form. Other illustrations were referred to.

To those who looked for regularity of rule in these cases, and in the light of the specimen of corn before the meeting, there might be a doubt whether the variation in corn often attributed to cross-fertilization, may not after all have resulted from an innate power to vary. It did not really follow that the rule should be uniform, for those who had experience in hybridizing knew how variable were the results, even from the seed of a single flower. Parkman had obtained in lilies seedlings so exactly like the female parent, that only for the remarkable form from the same seed vessel known as Lilium Parkmani, it might have been doubted if some mistake as to the use of foreign pollen had not been made. If so little influence could occasionally be found at a remote end of the line, we may reasonably look for an immediate influence at the nearer end in some exceptional cases. But there appeared to be no carefully conducted experiments on corn recorded anywhere, though the belief in the immediate influence of strange pollen is a reasonable one, so far as general observation goes. It seemed, however, to him, with the specimen of innate variation in corn before us, more careful experiments with corn and other things are desirable.

Flowering of Brownea grandiceps.—People go in crowds to see the Victoria lily, and it is a flower well worthy of a rush to see; but a much rarer beauty is the Brownea grandiceps, which at this writing (March 9) is showing flower buds in the Fairmount Park conservatory, Philadelphia. Those who want to see a rare and beautiful flower should not miss the opportunity to see it. It is of the pea-shaped or leguminose family, crimson we believe, with bunches similar to a Wistaria.

Influence of the Graft on the Stock.—Among the strongest arguments in favor of the idea that the graft has an influence on the stock is the experience of nurserymen with apple trees. It is well known that nurserymen can tell a variety by the root. A row of Maiden Blush apples when dug up, presents a very different appearance to a row of Fallawater roots. It was supposed that the graft gave its own character to the root on which it was grafted, and this has been accepted as an undoubted fact. Now comes Mr. Eli Meech, of Shiloh, New Jersey, and tells the *Farmer* and *Gardener* that the reason for the difference in the roots is that the grafts send out roots of their own. Now we confess that this is much more reasonable than the older guess; and until we get more evidence are inclined to believe that Mr. Meech has the best of the argument.

SCRAPS AND QUERIES.

Yellow Berried Myrtle Holly.—A Wilmington, N. C., correspondent says: "I send you by this mail a fruiting specimen of Ilex myrtifolia with yellow berries. The small tree I have removed to my yard to be able to examine it in flower. All the berries on the tree are yellow, and there is no evidence of red berries except around a few small insect wounds I saw on two or three of them. I thought you would be interested in the first find of a yellow holly."

[This is the first instance of yellow berries we have had before us of a yellow berried form, in this pretty species of holly. The English holly has yellow berried varieties.—Ed. G. M.]

Heteromeles arbutifolia.—"Miss Helen C.," Benardo, San Diego co., Cal., writes: "With this I mail you a bunch of berries that I picked from one of the many bushes that cover the hills here, and wish you would tell me through the Gardeners' Monthly what it is."

[This may be called an evergreen Hawthorn, and was known to the old botanists as Cratægus arbutifolia--the last name from the leaves resembling the strawberry tree, or Arbutus Unedo of English gardens. It has also been called Photinia arbutifolia. The name now in use by botanists is Heteromeles arbutifolia. The native name of the California Indians is Tollon. On a journey from Mariposa to Calaveras the fragrance of the white flowers reminded the writer of the sweet Hawthorn hedges of the Old World.—Ed. G. M.]

Cypripedium insigne with Two Flowers.—Mr. John F. Clark, Maud P. O., Pa., sends us a specimen of this orchid with two flowers. They are not twins, but the plant, usually with one flower, has attempted to make a spike. It will be very interesting to botanists as showing that the one-flowered orchids were designed to be spicate, but by some law of arrested development, have not the power in these days to do so. They may in the future, or have had the power in the past.

A Large Puff Ball.—This fungus grows to an enormous size sometimes—that is, the species known as Lycoperdon giganteum. Prof. R. C. Call found one in 1877 in Herkimer county, New York, 5 feet 4 inches across in its largest diameter. As stated in the Gardeners' Monthly some years ago, when taken young, cut into slices and fried in butter with a little pepper and salt, the puff ball is one of the most delicious vegetables known.

Diseased Roses.—"F. G. K.," Ottawa, Ills.: Your rose roots are covered with the galls of the root aphis. The branches injured no doubt suffer from the weakened vital power through the trouble at the roots.

Literature. Travels and Personal Notes.

COMMUNICATIONS.

REMINISCENSES OF CHARLES DOWNING.

BY CHAS. W. MURTFELDT.

Among the noteworthy incidents in the life of Chas. Downing is the fact, that, to the last, Downing's fruit book is credited to the authorship of A. J. Downing, who died over forty years ago, by the burning of the Hudson river steamboat near Tarrytown; thus showing the very modest, unassuming and unpretentious character of the great horticulturist—his brother.

I am proud that he called me his friend, and number among the pleasantest hours of my life those spent at his home in Newburgh as a visitor. On one occasion he invited me to visit with him his former experimental orchard, at that time owned by Mr. Alfred Bridgeman, a prominent seedsman of New York, who, to his honor be it here recorded, had given him the privilege to still carry on his experiments and to treat the fruit as if it were all his own. One of the pictures taken of Mr. Chas. Downing (I think for the *Rural New Yorker* but am not certain) represents him in the orchard with a small splint basket on his arm, selecting specimens. This identical basket he took and we sallied forth. We entered his former place and had gone through five or six rows of the pear orchard—every tree bearing from four to six varieties—it was in September, when Mr. D. stopped before a tree and bade me scrutinize two branches, both bearing, to observe the color of the bark, size and color of leaves and two fine pears. "I discover no difference," said I. "Neither do I," was his answer. Continuing, he said, "this pays me for my visit to-day. This scion was sent me by Mr. —— —— in 18— under such a name, and this I received from Mr. —— —— under such a name." Making a note in his memorandum book and marking the pears with pencil, he said, referring to the names: "This is the true name, and this is a synonym." Well may the Editor of the GARDENERS' MONTHLY exclaim, "Who shall now classify and identify our fruits!" And I will add, who now can take up the work where he laid it down? Such men as Chas. Downing are rare and seldom found.

Mr. Downing used his back parlor for an office; he worked at a flat desk which had drawers on each side full of memoranda. Horticultural authorities, such as Warder, Thomas, Hovey and others, and his own work, were ever within reach. Quantities of fruit were brought by every express train. After breakfast packages were opened and letters read; the fruit assorted and examined; then a fair medium—if more than one was received from the same source—specimen was cut into two sections, one of which was dried on a blotter and fully described, outline taken, size of core and number of seeds noticed (in apples and pears), length of stem, calix, depth of basin, color and general character described, and in the meantime the other section was frequently tasted and finally all compared with the descriptions of several authors as well as of his own. If needful, other memoranda were made, and published with list of new fruits in his supplements and additions to his book. Thus the whole morning was devoted to the examination of fruits. In this careful and deliberate way was his work perfected, and we who remain enjoy the benefits of his thorough and patient labors. To my mind the last twenty years of his life before the accident were the most pleasant and ideal of any man I ever knew.

On one occasion when I was with him he had just received the fruit catalogue of a distinguished German nursery firm. Mr. D. was not versed in the German language and requested me to translate for him some parts of the pamphlet. It was a great pleasure for me to do this, because I thus learned of his astonishing memory and ability to identify fruits. Before I could fully translate descriptions of fruits he would give the proper name in English and finish the description, and thus with thousands of varieties of apples, pears, cherries, etc. I expressed my surprise that he could remember so many names and the general character of so great varieties. "Yes," said Mr. D., "it is surprising to myself, but with the name comes up the fruit as in a picture or a photo; they are all engraved on my mind." Only long and patient study and an enthusiasm like his own could ever accomplish such results.

When Miss Waite married the subject of these lines, an intimate friend of hers said: "You had better take good care of 'Charley' for you will not keep him over two years," so slender and delicate was his physique and precarious his health. She nobly redeemed her promise, and so fully did she appreciate his worth and amiability and such good care did she take of her "Charley" that (had her own health permitted at the time) they could and would have celebrated their golden wedding several years ago, and I was promised an invitation and assured of a hearty welcome. At its anniversary Mrs. Downing was suffering intensely from cancer on the stomach, which terminated her life a few months later.

I have reason to believe that all the citizens of Newburgh fully appreciated his intrinsic worth and high character. In the city directory one may read: "Charles Downing, gentleman." I believe his was the only name so honored. He was indeed a gentle man. Peace to his ashes.

Kirkwood, Mo., Feb. 19th, 1885.

LADIES' TRESSES OR TRACES.

BY W. R. GERARD.

In a recent number of the GARDENERS' MONTHLY, the Editor, in reply to a query from a reader, explains the name "Ladies' Traces" as being due to the fancied resemblance of the twisted spikes of the plants to which it is applied, to the silken cords called "traces," used in olden times to lace up dresses. I am inclined to think the Editor is wrong. I can find no authority for such use of the word. Trace, as a synonym for lace [a cord. Ed. G. M.] would be as inelegant as "gallusses" for suspenders. "Lady's" or "Ladies' Tresses" is a very modern plant-name, and was invented, probably, as a supposed correction of "Lady's Traces," the old and correct name of the plant. When I say the plant, I mean the species to which the name was originally applied, Spiranthes autumnalis, Rich. "Lady's Traces" is an abbreviation of "*Our* Lady's Traces," just as "Lady's Slipper" is an abbreviation of "Our Lady's Slipper," the reference being to the Virgin Mary. I can see but one meaning to the name "Our Lady's Traces:" it is undoubtedly due to an old, and now forgotten, legend which ascribed the origin of the plant to the "traces" or "footprints" of the Virgin.

[Not perhaps lace, but "rope" or "cord," and the word is yet used for the ropes, cords or straps that enter into draught harness. Tracing or trussing was synonymous with cording up or lacing, by the peasantry among whom the writer of this was educated in the Old World. The part of the country in which that was located had been cut off for centuries with much intercourse with the more progressive portions, and words dropped for a hundred years elsewhere were still common there. By a note in Sir Walter Scott's Monastery, chapter 14, it would seem to have been in as common use in the north of England as in the extreme south. "I will," answered Father Eustace, "but I hear the gull clamorous for some one to truss his points." (Note.—"The points were the ends of the strings of cord or ribands, so-called because pointed with metal like the laces of women's stays which attached the doublet to the hose. They were very numerous and required assistance to tie them properly, which was called trussing.")

Aside from all this, Ladies' Traces is the early name. So far as we know, it was changed first by Dr. Curtis, a writer about a hundred years ago, simply because he did not know what traces were. Because he did not know, he guessed it to be tresses. Moreover, there is nothing in the flower of a Spiranthes to suggest a tress; for, if we understand the word, hair when done up in the cord-like twist that this flower presents, would be anything but a "tress." Our correspondent's reference to traces or foot-prints, may have been due to some forgotten legend in which the Virgin Mary had a place; but, there is nothing whatever in the flower itself to suggest any such an application. Is there such a legend?

It seems better to stick to the original word as handed down to us—trace—and leave to the accidental stumbling of some explorer in old literature for the true meaning of it.

Our sole object is, to protest against the modern change of traces to tresses, and to show that there is quite as good reason, if not better, for the original orthography than for the modern change. In this at least Mr. Gerard agrees with us.—Ed. G. M.]

LADIES AND HORTICULTURE.

BY N. ROBERTSON.

Any one holding a public position, where flowers are grown, will soon find out that ladies not only love flowers but take great interest in their culture. If we look at the humblest cottage window we are almost sure to see plants therein. A flower-pot may be something the poorer cannot reach, and so a box or broken dish takes its place; yet they would not consider their house complete without the plants. It often happens that ladies call on me for advice; and they are always ready

to receive it in a good spirit, even when against what they think is right; and they are ever ready to give their neighbors the advantage of what they have learned. A lady came to me about a Cactus, which she could never get to flower; but before she could get a chance to speak to me on the subject, she had been telling another what her trouble was. "I have one, and it blooms every year most profusely," said this lady, "and I will tell you how I treat it: In the fall of the year, when I take in my plants, I put my Cactus up in the garret, where frost cannot reach it, and give it no water, unless it shrivels up very much. In early spring, I take it down and clean it, put it in a sunny window, water it, and very soon I see the flowers starting." I had overheard what was passing, and when she came to me I told her just to go and do as her friend had advised her, and, no doubt, the same results would follow.

There are three principal errors that I have found ladies fall into with their plants; all connected with watering, and these are, the giving of too much water, too little of it, and watering freely when plants are sick. A healthy plant needs abundance of water, but it must drain away quickly. There are but few plants that will live in health with stagnant water at their roots. When you see your plants not growing fast, diminish the quantity of water, especially if they show signs of sickness. The reverse is the course generally adopted. Remember that plants will become exhausted by over-exertion, just as a person will. You must give them a time of rest, or nature will become worn out, and disease will follow.

Ladies love plants much more than gentlemen do. If you watch a lady and a gentleman go through a collection of plants, you will observe the lady to be the more inquiring of the two. She admires and smells the flowers and asks many questions as she moves along. But the gentleman passes along, casting only a partial glance, asking but few questions, unless he happens to have studied their culture, or in some way has made himself familiar with them. I have often told ladies, when I saw this occur, that if they want time to examine plants they had better leave the gentlemen at home, for they, as a general thing, will not give them time to do so.

It has always seemed to me that ladies were naturally better adapted than men to care for the more beautiful portions of nature's work. Some time ago I was shown a floral wreath, for which I had given the flowers. It was made by a young lady to decorate the remains of a departed schoolmate. Her hand was untutored to such work, yet, I must say, there was a natural beauty and delicacy in its arrangement that the rougher hand of man could hardly give; points of excellence were there that more expert and practical hands often fail to reach.

There is a saying, "Show me a person that loves flowers and I will show you one that has a warm heart gushing forth joy and pleasure to all around. It may be hid under a rough exterior but like the flinty rock when broken open has gems within that sparkle and dazzle the eyes." I wonder if it is true! I think it is, though, perhaps, the rock is not always struck hard enough to show its treasures. *Supt. Gov't Grounds, Canada.*

BULB COLLECTING.

BY J. H. KRELAAGE.

In your paper of February (pages 61-62) you give a very interesting correspondence about profits of plant and seed collecting; and although I agree totally with your reply, as the principal object of the correspondence is a bulbous plant, I thought it might be of some use to give my opinion on bulb collecting, especially as there are made many mistakes in that way. My firm has imported from foreign correspondents or collectors bulbs for more than half a century, and by experience I can state there is a great difference as to the value of such importations.

As a general rule (there are exceptions without doubt) it may be said that the value of bulbs collected in a wild state is inferior to that of those which have been cultivated already, and when cultivated it depends upon how this has been done. As for example for Narcissus, the way we cultivate them here in Holland in a soil perfectly adapted for this speciality, preparing the ground with much care, and taking up bulbs every year and replanting them as soon as possible, we get the finest and largest bulbs for the trade there exists, and such as usually are not supplied anywhere else so fine. Amateurs like to have their Narcissus in the same spot for more than one year to enjoy a finer flowering, and they are quite right. But when such plants are taken up after some years the bulbs are, if not all, at least for the greater part, misformed, and although very easy to multiply, totally unfit for a first-rate trade for other purposes. If Narcissus are taken up from the field or wilderness there is another inconvenience besides; one never is certain if these will come to bloom the first year, as generally

the difference of location has such an influence as to prevent the flowering, and then at last sometimes several years before the bulbs have reestablished themselves, so as to become adapted to the new mode of cultivation, and in consequence to flower regularly every year, especially some sorts of the Majus acantæ section or the ajax have this particularity. Your correspondent can conclude from this that if in retail there is charged 25 cents per bulb, it may be necessary to give a very much inferior wholesale price for introduced ones. To conclude about Narcissus, the sort your correspondent names must be the Bulbocodium of the ———— section (the Hoop Petticoat narciss), but it is very doubtful that it should be that sort, as Bulbocodium always gives a small bulb. If your correspondent will send us a few bulbs, as sample, we shall plant them and try to bring them in bloom and say what it is, after having flowered them.

The bulb of Sulphur Trumpet is much larger. This is quite a different variety, belonging to the Ajax section. There is a very small chance for it to be this sulphur colored variety. True, if it was, it would be of some value, as the true Sulphur Trumpet is scarce at present. As for Bulbocodium there is quite a sufficient stock of it in cultivation in Europe at different stations at this moment to secure a moderate wholesale price, and therefore if a certain quantity is to be sold extra this can only be done at a figure much beneath the usual price, as people always prefer to buy what they know to that of which they have no experience, and only a very cheap price can induce them to part from this rule.

Collectors often suppose that all of the bulbs of this or that sort which they send us are salable at a good price. Leading firms are often willing to give a good price if good things are offered, especially new or rare ones in a quantity in proportion to the number salable, and if they are certain that the same article is not in every one's hand or is not thrown on the auction market a few weeks after they have bought it. This is done too frequently, and the consequence is that people are not so much inclined to buy the first offered importation of bulbs as they perhaps were in former times.

There is in the bulb trade a number of articles which are salable in enormous masses, because they are generally known and are favorites for forcing purposes, for bouquets, etc., but it is usually a long time before such things, when new, become popular and salable in such masses. For this purpose better prices are had after their good properties are more and more known. At present Hyacinthus candicans has a general popularity, and every year hundred thousands of bulbs find their destination. When it was first published in the "Refugium Botanicum Tonnares," in 1870, it remained several years unobserved and unknown. Our firm was one of those who pushed it, but it required much trouble to bring it to the well deserved popularity of the present moment. It was introduced in small numbers, and the sale could be brought in proportion to the multiplication. If in 1870 a large number had been introduced at once, it is very doubtful if it would have become such a favorite.

There is in bulbs, too, a maximum trade price possible, and when the wholesale quotation surpasses that figure the sale goes back and this has a bad influence for the future trade in such an article. The common single Duc Van Tholl Tulip is used in Germany very much for forcing, and three bulbs in a pot can fetch there a price of six American cents; for such a price enormous lots can be sold in bloom early in autumn and at Christmas. Now the Dutch wholesale price for the dry bulbs some years ago has been for a long period two dollars a hundred and more, to make profit with bulbs bought at that rate a pot with three bulbs had to be sold at least at twelve American cents, a price much too high in comparison to that of other flowers, ready at the same period; the consequence was that the demand of this article was more and more reduced. At present the wholesale price is much lower than before, and such as to come to the old figure. which would permit a very large sale; but now the demand has not increased in the same proportion. The forcing of the Van Tholl is not so much practiced as before, other varieties of tulips having partially taken its place, among these the scarlet Duc Van Tholl, notwithstanding the common Van Tholl, is always the best for very early forcing.

From such examples it results that buyers of imported bulbs, either gathered in the wild or cultivated, can only buy a certain number at a certain price. In proportion as the number offered exceeds the immediate want, the price to be paid must be lower, to make up by the difference the loss of interest occasioned by a longer period of sale becoming necessary, or the cultivation covering some years; or if buyer wishes to sell all within a short period, to pay extraordinary costs necessary for advertising and publishing to push the article. Then some articles of which the

usual trade furnishes a sufficient stock, are not really totally unsalable. For a great number of bulbs, not generally known, and not employed for some special purpose, there is only place for a restricted number to supply the amateur and some growers who keep collections. These remarks naturally do not concern a local trade, they have only relation to the position of the trade of bulb collectors on the world's market.

A great inconvenience arises when collectors send bulbs without, or with wrong names. In such cases the value of the bulbs is much inferior as to what it would have been otherwise. Received without a correct name, the article first must be cultivated, and is not salable before it has flowered and the name has been ascertained. Great error occurs from sending under false names, so large numbers of the fine but totally different Sprekelia glauca were some years ago sent as Amaryllis formosissima to the great disappointment of those who received them.

The best plan for collectors is to correspond with one or only a very few leading firms, and before sending out any thing, first to inquire what is salable and in what numbers. In every doubtful case it is advisable to send first a small quantity as sample, that the expected buyer may see and if necessary study this, and then if the offer is accepted for later consignments a fair price can be paid. *Haarlem, Holland.*

ORIGIN OF THE NAME PERSIMMON.

BY MAJOR JED. HOTCHKISS.

I see by the "Persimmon" item, on page 94 of your capital March number of the GARDENERS' MONTHLY, that you have not at hand the "Works of Captain John Smith," especially the elegant and scholarly edition that Prof. Edward Arber, Birmingham, England, has recently published. The following extracts record what he had to say about persimmons in 1607–9.

In his chapter "Of such things which are naturall in Virginia and how they use them," Captain Smith says: "Plumbs there are of 3 sorts. The red and white are like our hedge plumbs; but the other, which they call Putchamins, grow as high as a Palmeta. The fruit is like a medler; it is first greene, then yellow, and red when it is ripe; if it be not ripe it will drawe a man's mouth awrie with much torment; but when it is ripe, it is as delicious as an Apricock.

"The fruit like medlers, they call Putchamins, they cast uppon hurdles on a mat, and preserve them as pruines." Arber's Works of Captain John Smith, page 57.

This fruit, as you know, is highly esteemed in Virginia, so we are interested in whatever is said of it. You have in the above the origin of the name, I suppose. The present form is one that can be readily evoluted from Putchamin.

Staunton, Va.

[It would be very interesting to know the meaning of the Indian word, Persimmon.—Ed. G. M.]

EDITORIAL NOTES.

M. CARRIÈRE.—We have already noted the government honor conferred on this distinguished French horticulturist; some additional notes concerning him are given by a correspondent of the *Garden*:

"Those who are acquainted with the able chief editor of the *Revue Horticole*, or with his works will be pleased to learn that the French Government has conferred upon him the Cross of the Legion of Honor. Probably no horticulturist living better deserves this compliment than M. Carrière, who has ever been noted for remarkable activity, great practical knowledge, and the art of imparting the same in clear and concise language. For many years in charge of the outdoor department of the Paris Botanical Gardens, he possesses an intimate knowledge of hardy plants of all kinds, their capabilities and propagation. Besides constantly contributing valuable articles to the French gardening papers, M. Carrière has written a number of works, some of which are highly esteemed. The most important are the 'Propagator's Guide,' illustrated, which is considered the best work of that kind in the French language; a 'General Treatise on Conifers,' 'Encyclopædia of Gardening' ('Encyclopédié Horticole'), and 'Obtaining and Fixing Varieties of Vegetables.' M. Carrière's last work just issued is called 'Ornamental Fruit trees,' and is a small illustrated volume of 175 pages, containing all necessary information concerning those small fruited apples which are only useful from an ornamental point of view. In France these ornamental apples are more planted than with us."

TEWIN—not "Lucien," is the name of the Hertfordshire town noted by Mr. Wooding in our last.

KNOWLEDGE OF EVERY-DAY THINGS.—Nothing is more common than to find people of remarkable education, utterly helpless in the every-day affairs of life. They are really the most ignorant of human beings. We can therefore sympathize with the author of the following lines; simply premising that from our experience of human life, some female lampooner could hit the male sinner a great deal harder, only for the charity which they, good creatures, throw around the failings of men:

"She had views on co-education
And the principal needs of the nation;
And her glasses were blue, and the numbers she knew
Of the stars in each high constellation.
And she wrote in a hand-writing clerky,
And she talked with an emphasis jerky;
And she painted on tiles, in the sweetest of styles,
But she didn't know chicken from turkey."

JAMES RITCHIE.—The few still remaining of the older race of florists in the United States will learn with great regret of the death of James Ritchie, which occurred March 11th, from suffocation with coal gas, coming from the heater through the register. He had reached his 77th year, and was still hale and hearty, having been but a short time before with the writer in the City Council Chamber, in which he also had served six years.

He came to America in early life from Scotland, and after a short time in Philadelphia, he started in partnership with Mr. John Dick (who had married his sister), in the florist business at Kensington, when in his 28th year. The firm of Ritchie & Dick was a very successful one, and in some articles, especially in camellias, roses, and azaleas, obtained a reputation all over the world. About twenty-five years ago, having a competency that satisfied him, while his partner was still anxious to push things, the firm dissolved, taking the unique and friendly way of dividing the plants into two lots of as nearly equal value as possible, by one taking what he thought the best plant, the other the next best, and so on till the whole was divided. Mr. Dick established himself in Kingsessing; Mr. Ritchie continuing in Kensington, but confining himself to little more than cut flowers. In this he may be said to have been one of the leading pioneers in a trade that has since reached enormous dimensions in Philadelphia. His work was so tasteful as to be always in demand. He was among the leading members of the Pennsylvania Horticultural Society in its palmy days, and continued his interest through all its days of trouble and disaster, down to the day of his death. He was one of the original contributors to the fund for building the famous Horticultural Hall.

The first articles that appeared in our magazine on steam heating, were from his pen, and much of the wonderful progress made in this department is the result of the interest his papers excited.

NEW BOOK ON GARDENING IN THE SOUTH.—S. W. Peek, of the Hartwell Nurseries, in Georgia, will soon issue a work entitled, "The Nursery and Orchard." It will be of 200 pages, and illustrated.

HOW JOHN'S WIFE MADE MONEY AT HOME.—Published by Hunter M'Calloch, 1828 Reed St., Philada.

This is full of very good suggestions about bee-keeping, silkworms, canaries, one cow, and chickens. It is a pamphlet of 80 pages, and will be well worth its cost to those interested. It is, perhaps, all a matter of taste, but the effort to make one believe that John's wife wrote it is a miserable failure. It is another case of the old Adam putting up a job on Eve. One can, however, excuse this for the sake of John's good suggestions.

CORN AND POTATO MANUAL.—By J. C. Vaughan, Chicago.

The tables of the GARDENERS' MONTHLY fairly groan with trade catalogues which we are repeatedly asked to notice. There is rarely one that has not some commendable feature, and we cannot notice one without taking in nearly all. A magazine like ours has no room for this, and hence catalogues cannot be noticed in our reading pages. But it is often very difficult to decide as to what is a mere catalogue, for some of them give information equal to that which the most valuable library book could give; and just such a case is this before us, though it is essentially a catalogue intended to help the trade of the author. It is brim full of information which in its treatment at least, has a fair claim to be repeated as original. We give the following specimen from the chapter on Indian corn:

"It is not the age, but the birth-place of Indian corn that is in dispute. All authorities agree as to its antiquity. Those who claim America for its origin tell of its being found in tombs and ruins of South America, in caves of Arizona, and mounds of Utah. Darwin, in his 'Voyage of a Naturalist,' mentions a head of a stalk found imbedded in a shell and sea-drift eighty-five feet above the surface of the sea. The Ill. Hort. Soc. Trans., 1876, contain the statement of a Mr. Spitz, that he came upon petrified stalks and ears of corn, perfect in appearance, while working a stone quarry, near La Prairie, Adams Co., Ill. The Smithsonian Institute has an irregular, 13-rowed ear of corn found in an earthen vessel eleven feet under ground, in the tomb of a mummy, near Ariquipi, Peru.

"Those who claim Asia for its origin point to the representation of the plant found in an ancient Chinese book in the Royal Library in Paris, and tell of the grain being found in cellars of ancient houses in Athens. Rifaud speaks of finding the grain and ear of maize within the tomb of a mummy at Thebes, in 1819. A few like Corbett claim it to be the corn of Scripture. It is in-

teresting to note the apt quotations he makes to prove his theory. Here are a few of them: Mark 2: 23, 'And it came to pass that He went through the cornfields on the Sabbath day; and His disciples began, as they went, to pluck the ears of corn.' Leviticus 2: 14, 'And if thou offer a meat offering of thy first fruits unto the Lord, thou shalt offer the meat offering of thy first fruits, green ears of corn dried by fire, even corn beaten out of full ears.' Leviticus 23: 14—'And ye shall eat neither bread nor parched corn, nor green ears until the self same day that ye have brought an offering unto your God.' Gen. 41: 5,—concerning Pharaoh's second dream—'And he slept and dreamed the second time; and behold, seven ears of corn came up upon one stalk, rank and good.' Job 24: 24, says the wicked are 'cut off as the tops of the ears of corn.'

"It is a general truth that those plants which have many varieties and a wide range as to soil and climate have been grown for ages. For example: the pea and the bean, wheat and oats, the rose and the lily, the apple and the pear, etc., etc. Now, Indian corn in this fact can establish a great age, for its varieties need only end with the skill and the patience of the cultivator, while its range in America is from 40 S. Latitude to 54 N. Latitude; in Europe, over its central and southern portions; and in Asia, over limited areas of India, China and Japan.

"It is not certain that Indian Corn has ever been found in its wild state, though we have a variety called 'wild corn,' in which each kernel is covered with a husk. The U. S. Patent Office Report for 1853 has a cut of it, and says it is to be found growing 'in the Rocky Mountains of North America down to the humid forests of Paraguay.' We have the rather doubtful authority of native Indians of Paraguay that it has been found growing wild in their forests. The seed of this wild species will grow the common and husked varieties, which would seem to prove it not the primitive type, but a variety escaped from cultivation.

"An unimpeachable history of Indian Corn can never be written, as the subject is full of counterfacts, contradictions and speculations. Learned authorities, both early and late, have differed as to its origin, some claiming it a native of Asia, others of America.

"Bock, in 1532, forty years after the discovery of America, and Ruellius, in 1536 ascribe to it an Arabian origin. Fuchsius, in 1542, mentions its introduction into Greece from Asia. Bonafous, in 1836, calls attention to the assertion of certain Spanish authors that corn came to Spain from Arabia, though he himself believes the plant a native of China. He speaks of an illustrated work on maize written by a Chinese botanist, Li-chi-tchin, in 1552, which seems to have had great weight with him in his decision on this question. A map of the 13th century, called 'Chart of Incisa,' describes 'meliga' as a 'grain of golden color and partly white.' In 1204, the Crusaders are said to have brought a few of these grains from Asia Minor into Italy; and in 1250 the Italian Crescenzio describes its methods of culture, which strikingly coincide with our methods of culture of corn.

"An argument of considerable weight is deduced from the general statement of botanists, that plants of one family mainly inhabit a common locality. Wheat, rye, oats, barley, millet, Indian rice, sorgum—all the allied family of corn are of Eastern nativity. Now, suppose a Western origin for corn is admitted, then it is separated from its kindred. If of Eastern origin, then how came it here, can only be answered by inference. There are marks and relics of an ancient civilization scattered here and there over our land—a civilization beyond any found here at the time of America's discovery in 1492. That it came from the East over a Northwestern highway, connecting Asia and America many scholars believe. Admitting this, we can easily see that the migrating nations might bring with them many seeds and plants, and among them Indian Corn.

"The Fair God of the Mexicans, a God of peace and peaceful arts, is supposed to have been a Caucasian brought by some untoward wind or wave upon these Western shores. There is a tradition that when he lived on earth an ear of corn was as much as a man could carry. Putting this tradition with the fact that corn is so involved in their religion and religious rites, it is easy to surmise that the same wave that brought their God brought their seed likewise. Frail craft have been driven over the wide ocean and have made a safe landing on these shores several times within the past century.

"Many modern authorities, as added proof of an Eastern origin for corn, point to the grain found at Athens, and at Thebes. Rifaud called this grain 'Maize.' Virey calls it 'Sorghum Bicolor,' a native of the East; Delile says, of Egypt.

"There is a long list of weighty authorities arrayed on the side of its American origin. Dodonius in 1583, Gerarde in 1597, Matthioli in 1645, wrote of its introduction into Europe from America. Thomas Nuttall and De Candolle assign it to a South American origin. Humboldt, Darwin and Flint maintain its home is this side of the ocean. They deny that 'meliga' mentioned on the Chart of Incisa is the species 'Zea Mays.' They claim no treatise on corn was ever written prior to the discovery of America, that since the Portuguese had discovered Java as early as 1495, fifty-five years gave ample time to introduce it thence into China. They make much of the fact that no traveler in Asia or Africa, though he describes minutely the products of the soil, ever makes mention of this most important one. Again, that it seems strange beyond belief that if known at all it was not in common cultivation, since it spread so rapidly upon its introduction from America. On the other hand, in America it was found from Chili to Montreal, and as far West as the discoverer penetrated the 'native wilds.' Columbus found it on the Island of Cuba; Cortez found it in Mexico; Pizarro found it in Peru, the Puritans found it in New England; the James River colonists found it in Virginia; Cartier found it in Canada, and Marquette, in 1673, found it in Illinois.

"Nor did it exist alone in one variety, but in many. Winthrop mentions corn of various colors. Josselyn says: 'The blew is commonly ripe before the others.' The Mandans, a North-western tribe, had a very early variety. The King Philip corn of the Wampanoags has descended to us. Sweet-corn was found on the borders of the Susquehanna, and yet other varieties in other sections and among other tribes."

We may add to this very interesting chapter, that corn is the term universally applied to bread stuffs in the old world; a corn-field is a wheat-field, and corn is simply wheat. The corn of Scripture is wheat or some of its allies, and it is just possible that Darwin meant wheat when he says he found a head in a shell. An ear of our corn would not bend, and it would take a considerable sized shell that would permit a stiff ear like that of Indian corn, to become imbedded without bending. Corn is a name given to the maize, simply because it was another item in the list of breadstuffs, in use by the Indians. A want of perception of these facts has made the history of Indian corn a perplexing study.

THE PEANUT PLANT.—By B. W. Jones.

THE TOBACCO REMEDY.—By General T. L. Clingman.

PRAIRIE EXPERIENCE.—By Major N. Shepherd.

These are all useful, practical little works, by some well-known authorities, and are issued by the well-known firm of Orange Judd Company, New York.

CACTACEOUS PLANTS: Their History and Culture.—By Lewis Castle, of the *Journal of Horticulture*, London; sold also by Chas. H. Marot, Philadelphia.

This is a very timely little book, for there never was a period in the history of American Horticulture when a knowledge of cactuses was more sought for than now. They do not as a rule remain long in flower, but this very fact gives zest to the anticipation to see them blossom. But—and this is perhaps one of the most remarkable features about them—though so short a time in blossom, they mostly come into bloom at different times, so that one who has a large collection, may have cactus flowers almost any time in the year. Cactuses are all natives of the New World, so although this is an English work it treats of American plants and thus will be very welcome. Some fifteen are figured, a large number described, and useful hints for culture adapted to all.

PLANT LIFE ON THE FARM.—By Dr. M. T. Masters. New York: Orange Judd Company.

Dr. Masters is the editor of the London *Gardeners' Chronicle*, and besides his labors in many branches of botany, stands especially pre-eminent in the department of plant-life. He has had the great advantage of many years of editorial experience, which gives a scientific man the chance to know what the people need; while himself the son of a very successful English nurseryman, he has had that practical experience among plants that is so helpful to a teacher of vegetable science.

This work treats of plant nutrition, the machinery of nutrition, growth, sensitiveness, development, multiplication, the battle of life, practical influences, decay and death,—all this in a small well-printed book of 130 pages.

The New York publishers are to be congratulated on being the vehicle to give to the American public this little work from so able a pen.

TRANSACTIONS OF THE WORCESTER COUNTY, MASSACHUSETTS, HORTICULTURAL SOCIETY, FOR 1884.—From the Secretary, Ed. W. Lincoln.

Last year, in noticing the receipt of this excellent publication, we remarked on the injustice to the whole community, of letting the property of voluntary associations go free of taxes; nothing whatever is gained to the community thereby. We all pay double taxes in order that each other may get the half. But it works unjustly because there are numberless institutions just as worthy of freedom from taxation as those which creep in under exemption, that pay full taxes. This was the case with the Worcester County Horticultural Society. Its property was taxed, while property devoted to what is vulgarly known as the "Hoss-trot," was exempt. We are glad to see by this report that in some slight degree this injustice has been removed, and the legislature of Massachusetts has permitted some of the property of the Horticultural Society to be free of taxes as well as all of that belonging to the Agricultural Society.

It will, however, be a grand day for our whole country when all property shall be equally taxed. It would reduce the tax rate one-half in all large cities, and render the flow of private benevolence double what it is at the present time; charity would be largely the gainer, and not at a loss.

SCRAPS AND QUERIES.

CINNAMON VINE.—A correspondent complains that she had the Chinese Yam in her garden, and much prized it as an ornamental vine for the summer covering of an arbor. Seeing advertised the Cinnamon Vine, she ordered it and "paid a good

price for it," only to find it her old friend the Chinese Yam. She thinks respectable papers should denounce such tricks. The trouble comes from the right which even some "respectable papers" claim for everybody or anybody to give a plant an English name. It is not a trick but a right they claim. Botanical names are sometimes hard to pronounce and to remember. Even with them there are sometimes synonyms in general use—but seldom to the extent that people buy a plant twice over.

CARELESS STATEMENTS OF FACTS.—Referring to the statement of an English Encyclopœdia that the "Pashamin" is a name given to Diospyros Lotus, when it is the Indian name of an American species, a correspondent says: "It is not in an English work of any kind to give even the simplest fact correctly;" and calls attention to a statement in the *Encyclopœdia Britannica*, that "Dr. Hayden, of Yale College, made an extensive exploration of the American Territories—Dr. Hayden never having been connected with Yale College." We cannot assent to the sweeping assertion of our correspondent, yet we are often surprised at the unpardonable inaccuracies of statement that continually present themselves. *Forestry*, for March, says that "Miss Mary Wagner has been writing Transcontinental letters in the *Rural New Yorker*." Mrs. Mary Wager Fisher will, no doubt, wonder if it really means her. It is not usual, with *Forestry*, however, to make slips like this.

DERIVATION OF DIERVILLA.—"G." asks:—"What was the name of the man from whom the genus Diervilla got its name? His name is variously given as Dierville, Diére ville, (acute accent on first e,) Dièreville, (grave accent,) etc."

Linnæus, in Hortus Cliffortianus, says the name was given by Tournefort in compliment to a French surgeon, named Dierville, who was the first to introduce it "from Acadia, North America," to Europe. As the names introduced into botany follow the Latin or Greek pronunciation, no matter how the person's name may have been pronounced by his own countrymen, this one will be Diervilla; the accent being on the third syllable, as if written Dier-villa.

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

THE WORLD'S EXPOSITION AND COTTON CENTENNIAL.

BY JAMES E. WALDO.

What part have the horticulturists and florists had in preparing this grand display? The ground on which this Exposition is spread out was once a plantation. Till within a few years it was not open to occupation for residences; hence the city is built all around it, except the river front. It was a tract of 249 acres, extending from the river to St. Charles Avenue. About ten years ago the city bought it for a city park, but had done nothing towards its improvement for want of funds, allowing it to be used as a stock pasture. Nothing on it or about it to remind one of a park, unless it might be the majestic old live oaks, planted in avenues and draped in Spanish moss, spreading out their immense arms over large areas of ground. Who planted these live oak avenues, now so magnificent, I have found no one to tell me. But any one seeing them can but believe they were planted by man, and not less than a century ago, to have acquired such immense growth. This was the locality selected but a little more than a year since, as the site for the World's Exposition. Within that time the general management has covered about seventy acres of this ground with roofs of the several buildings for various exhibits. The main building covers 33 acres; the Government building over 10 acres. The other buildings are for machinery, live stock, art gallery, etc. All are filled,—not only on the floors, but in the galleries, with the goods of a thousand exhibitors.

To the horticulturists and florists, under direction of Mr. Parker Earle, President of the Mississippi Valley Horticultural Society, was given the preparation of these rough 249 acres, and to properly drain and level the surface; to lay out miles of walks, some shelled and some covered with asphalt; to plant several thousand trees and shrubs; to

grass over grounds not otherwise occupied. On a slight elevation about half way between the Main Building and the river front, at one end of an avenue of these magnificent live oaks, they have erected, perhaps, the largest Horticultural hall on the continent. The building is 600 feet long and 194 feet wide, with a dome and tower 90 feet in height. In the centre of this building beneath the dome, is a large reservoir of water, with a jet of water constantly in play. The whole structure of the building is mainly of glass. The extension of the building on each side of the dome is nearly 300 feet, the centres of which are filled with tables for the display of fruits, and the sides for the display of plants. On the south-west side of the building is an extensive greenhouse for the display of tropical shrubs and plants.

FRUIT DISPLAY.

Tables for display of fruit fill the entire center of Horticultural Hall. Four rows, side by side, seven to eight feet wide, go the whole length of the Hall, amounting to over two thousand feet in length. It is now about two months that these vast tables have been crowded with the various fruit displays. The question has been asked whether the display has been equalled? A gentleman who has had some experience in such matters, Mr. Lyon of Michigan, says it never has been equalled. Early exhibits were mainly apples and pears from the different states and territories. Seventeen states contributing to the display, with small contributions from Canada, England and France.

The best exhibits were from Arkansas and Missouri, each taking a first premium. The marvel of all was to see the progress made in fruit growing in the newer Western states and territories, exhibiting displays ahead of many older states. Mexico, Jamaica and British Honduras, have fine displays of oranges, lemons, pineapples, cocoanuts, with also sugar cane. The Mississippi State Horticultural Society makes a truly fine display of preserved fruits—apples, pears, quinces, and small fruits. Wm. Parry of New Jersey, has also a fine display of preserved Kieffer pears and small fruits. The early displays of Northern fruits, remaining on exhibit from six weeks to two months, having been much thinned out by decay and other causes, have partly been removed or condensed so as to make room for Florida's display,—a truly wonderful one. The State exhibit is in charge of Dr. G. W. Davis of Jacksonville. The exhibit is large and has many attractions, but the greatest of these are two private exhibits made by Major O. P. Rooks of Fruitland Park, Sumpter county; and C. P. Magruder of Rock Land Home, Indian River. These two exhibits are much the same, and would be hard to surpass.

To particularize, in Magruder's exhibits are Lemon Citrons weighing 11 lbs.; Rose Shaddocks, 7 lbs.; French Lemons, over 2 lbs. They claim about 80 distinct varieties of oranges. Their other fruits are pineapples, cocoanuts, guavas, &c. The Florida exhibits taken together cover several thousand plates.

Although the plant portion of the show is not what we had a right to expect it would be, the fruit display is all that could have been expected. Indeed the plant display, unfortunately, very unfortunately, is the only lame point (and that is not as lame as it might be) in the whole affair, covered as it is by about seventy acres of roofs.

New Orleans, La.

EDITORIAL NOTES.

PENNSYLVANIA STATE HORTICULTURAL ASSOCIATION.—Judge Stitzel said he had the pleasure of introducing the lecturer of the evening, Prof. Thomas Meehan, whose theme was "Fruits and Flowers in Connection with the Progress of Civilization." Starting with an anecdote and putting the audience in the best of humor, the lecturer went on to laud the high civilization of the nineteenth century—a civilization which comes of a careful regard for the good of others. The earlier civilization was of a different sort. Now the chief aim of civilization seems to be to promote the well-being of others, and in no line of occupation is so much contributed to this civilization as in that of horticulture—a love for and cultivation of the beautiful. A striking illustration of a beautiful character of this kind was found in the life of the late Charles Downing, whose death we so keenly mourn to-day. He was the embodiment of all that is good and noble in man, and his horticultural pursuits undoubtedly had a moulding influence in the formation of his character. A love of flowers begets a love for humanity—and to love humanity and to look to its highest, noblest, development, is civilization.

The quince may be instanced as an illustration of how closely allied the fruits are with the history of man. The very name—or at least the Latin name—of quince, shows where it originated. We often hear of marmalade in connection with fruits, and it really is a part of the history of the quince.

Marmalade was first made at Marmelon, in Spain, and has given its name to preserves of other fruits for preserve; hence it originally meant, as applied to the quince, quince preserve. The cherry is an evidence of civilization, and wherever it is seen you will find civilization. Among the ancients the fruits and flowers formed a conspicuous part of the people's history. Flowers were used among the Greeks and Romans to crown the conquerors. The carnation, originally grown in England, was used for the purpose just mentioned—making garlands for heroes, and hence its name Dianthus. Many flowers would never have been traced to their origin had it not been for literature. We find, by tracing the literature of various nations, the origin of many plants and flowers, by discovering the uses to which they were put. In the matter of corn, it is well known that grains of it were found in Indian mounds.

The grape seems to have been a native of Asia, and native grapes are found in Japan and China that are very similar to our wild grapes. In the study of the grape, therefore, we might have a clue to the history of the Indian. There are forms of vegetable growth which follow man without any apparent reason, and the lecturer had read of a botanist who claimed that he could tell the nationality of a man by the weeds which surrounded him. To go more closely into this study—to show more clearly how closely civilization is connected with the development of fruits and flowers, he would call attention to the efforts that are made by those in barren or semi-barbarous regions to induce people to settle there. Gold or silver mines, indeed any of the minerals of the earth, may attract settlers in the regions where the minerals are found; but the attraction of fruit and flower culture will take the miner from his mine, and this will eventually bring about the civilization of that region. Look at Florida: how many thousands have been lured there to cultivate oranges, and with that cultivation came civilization. How much horticulturists have suffered in introducing one plant from one region to another, and yet all these sacrifices were made for the good of humanity. How much will often depend on the chance introduction of a single plant! Take the history of the cotton plant in this country; human slavery, the chief industry of the South, a fratricidal war, and the final emancipation of the slaves, all resulted from the introduction of a cotton plant at Jamestown about 200 years ago.

The elevating and beneficial influence of flowers finds an exemplification in the kind offices of those who belong to the Flower Missions of the large cities—taking flowers to the hospitals and to the sick and suffering poor generally of the city. Pass an humble home, with its windows decked with flowers, and you at once feel that, though poor, the inmates of that dwelling are not without virtue. Gifts of flowers to the very poor would prove a better investment than giving them money, for the refining, elevating influence of the flowers would make better citizens of them by teaching them lessons of industry and thrift. The lecturer related his experience among the Indians, even in far-away Alaska. He remembered how he and his company had been warned not to go too far among a certain tribe, and there he found Captain Crittenden, of Kentucky, who had been in the rebel service, and had vowed that he would rather live among the Indians than among civilized people after the defeat of the cause for which he had fought. There, among those dangerous Indians, on whose grounds the travelers had been warned not to encroach too closely, lived Captain Crittenden. He had a garden which he cultivated, and he told the lecturer that he gave the Indians vegetables and flowers and flower seeds, and the poor untutored fellows had learned to love him, and some of them at least had learned to grow flowers and vegetables. From savages they were transformed to peaceable, kindly neighbors. The lesson was one that ought not to be lost on us.

The lecture occupied little over half an hour in its delivery and was loudly applauded. At its conclusion Dr. Wickersham, on behalf of the citizens of Lancaster, and particularly on behalf of the pupils of the High Schools who were present, moved a resolution of thanks to Prof. Meehan for his entertaining and instructive address, and the thanks were given with a will.

[A correspondent says: "I feel sure, if you would give in the GARDENERS' MONTHLY the address you gave us at Lancaster, it would give as much pleasure to large numbers of your readers as it did to us. If not to be published there, where may we see it?"

To this we can only say, that the Editor does not prepare written lectures, has no time to do so, but is always ready to have a pleasant talk with his friends when he happens to be present with them.

We give above a short abstract made by the reporter of the *Daily Era* from the Pennsylvania State Horticultural Association, which is all we are able to give now of the talk on that occasion. The excellent Secretary, Engle, may have his report in the annual proceedings.—Ed. G. M.]

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXVII. MAY, 1885. NUMBER 317.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

The system of bedding plants has called for a new class of characters. Formerly viewed as a "florist's flower," a verbena, for instance, would require roundness of form in the individual flower as a first requisite. The lobes of the edges of the border should seem so to overlap each other as to form a perfect circle. Then there should always be an "eye," and the colors of this eye and the margin beyond be well defined, and not run gradually into each other. But for bedding purposes, a new and striking shade of color, a free blooming character, neat habit of growth, and power to endure a hot, dry sun, are of far more importance; and the energies of our improvers should be devoted to this end. Seedling raising with this view is very interesting, and we would recommend all our amateur friends to try their hands at it. It is a highly interesting source of gratification even in itself. The way to proceed is to note some variety that approaches nearly to the desired shade, and select seed from these. The next season some flowers will be produced probably deeper, and in a few generations, by careful annual selection each time, the desired shade can be obtained. The old notion that "like produces like," is a fallacy. There is always more or less of difference in the progeny from its progenitors, though most generally so slight that we do not observe it; but a little art added to nature's own process brings out the variations very remarkably. Where quite different characters from the original are desired, hybridization may be resorted to. For instance, we may have an excellent habit of growth, and free blooming quality, but a dull colored flower; a kind as nearly allied to the good qualities as possible, but with better colors should be selected with which to fertilize the other. Flowers should be selected for fertilization soon after they have expanded, and the one used as a fertilizer chosen when matured. The flower of the former may then have the latter shaken over it, and fertilization will probably ensue. This is a rough method. The passage of a camel-hair pencil from one flower to another is better; the pollen from the stamens of the one is more certainly carried to the other. When hybridizing is carried on with nicety, it is best entirely to remove the anthers with a pair of scissors before applying the pollen of the other kind. This lessens the chances of self-fertilization, and renders the operation either a certain failure to produce seed at all, or a different race from its parents by the seed so produced. New fruits may be produced in the same way. It was at one time supposed all these productions were mules, and though they might produce flowers in their progeny, would not produce fruit, and so the operation would not benefit the pomo-

logist. But this is now found not to be the case. The progeny is sometimes barren, but this is rather the exception than the rule.

This is not the period of the year to thin out trees when they have become too thick on the grounds; but the autumn will soon be here, and in view of the importance of the question, it seems a seasonable hint to be given now. It is surprising, in view of how much has been written about it, so little thinning is done. In our own city of Philadelphia, where, if anywhere, one would think the influence of the GARDENERS' MONTHLY would be felt, thousands of trees are annually destroyed by the struggle with one another, simply because of a sentiment that it is not wise to destroy in an hour what it has taken a quarter of a century to grow. Let any one note a tree standing by itself—note it at this season, when covered with foliage, and note the branches extending, perhaps, fifty feet from the trunk, and admitting a glorious current of cool air under it; and then note the score or two of trees crowded together in a hundred feet lot, the branches struggling upwards to get a glimpse of the sky—forming an impenetrable mass through which not a breath of air can stir, and he will see the difference. The owner often sees it; and instead of thinning the trees, calls in the aid of the tree-butcher who lops off the heads. The result is, these large scars never heal, the wood rots, and in a few years the trees have to be taken out at any rate—the whole tree is gone. And then, what do lopped trees look like? They are outrageous in the sight of every person with even the germ of taste. Street trees especially suffer from this unseemly crowding. It is very well to put trees about 20 feet apart at first, because we get some shade and some ornament sooner than we should do. It looks naked for too long a time, to have small trees so set with the view to what they will be in a quarter of a century hence. It is best to set double the number of trees finally required, with the firm determination to take out the half ten or twelve years after; or that some one else may do it, if we should ourselves be in another land.

COMMUNICATIONS.

CANNA EHEMANNI.

BY THEO. NISSEN.

When a boy, in about 1844 or '45, my father received from the well-known firm, Booth & Sons of Hamburg, this Canna, under the name of Iridiflora, and if I recollect right, it was exactly the same thing sent out now as Ehemanni.

This Canna was first found by Ruiz & Pavon in Peru, and named by them Iridiflora. Curtis, in his Botanical Magazine (No. 1968), I believe in 1823, gives the first illustration of it; also Loddiges in Botanical Cabinet (905), and Edwards in Botanical Register (609).

Prof. Reichenbach in 1826, in one of his works calls it a rare and beautiful plant, then in flower in the Botanical Gardens at Dresden (Saxony), and often confounded in European gardens with other species, but very easy to distinguish by its drooping flowers.

Mr. Heffron will see that Iridiflora is the original name given by Ruiz & Pavon, and that Ehemanni is put to it to pass an old plant for a new one.

Davenport, Iowa.

THE CLEMATIS.

BY JOSIAH SALTER.

The complaints of a nurseryman, in the GARDENERS' MONTHLY for January, of having many unprofitable questions put to him, and which he can ill afford time to answer, reminds me that I frequently find myself sailing in the same kind of ship, by having numerous questions asked and inquiries made, both verbally and written, about the Clematis. It has occurred to me that it might be advisable, if acceptable to you, to offer a few remarks, concerning the Clematis, through the columns of your very excellent GARDENERS' MONTHLY. In so doing, I trust it may be remembered that the following remarks are not intended for the edification of gardeners or nurserymen, or any of the profession, who, in all probability, know the subject much better than I do.

But, inasmuch, as the Clematis is becoming very popular and deservedly gaining favor every day, and, as the professionals say or write very little upon the subject in the periodicals of the day so far as I have seen, I will endeavor to answer the querist as best I can, and he must take the reply for what it is worth. There appears to be quite a lack of general information upon the subject, and the queries are as numerous about the old as the new varieties.

According to the books, the word Clematis is derived from the Greek word *klema*, meaning a vine branch, because most of the species climb like a vine.

The Clematis belongs to a very extensive genus

of mostly hard-wooded, climbing, ornamental, flowering, shrubby plants, and one species or other are indigenous to almost every quarter of the globe. I once heard a lady exclaim to another, while admiring a beautiful Henryi: "Oh! what a beautiful flower; what a lovely Clematis! Where do Clematises come from?" The reply was: "Oh—oh—they come—they come—they come—from all over." How much "all over" was intended to imply I cannot say. But truly, sir, they come from all over. They are almost cosmopolitan. They are here, and they are there, and they are everywhere. Yet many people seem to think there are very few varieties in existence, and these few are considered comparatively new. Whereas there are from 250 to 300 varieties and species in regular cultivation, and of this number, perhaps 250 are what are called large-flowered hybrid garden varieties. Some of the species have been in cultivation over three hundred years, and are still quite popular.

Jackman says: "The scientific records give a total of about 230 species. Of these 17 are European; 43 of Indian origin; 9 are Javanese; Persia 1; 30 of the finest species from China and Japan; 11 from Siberia; Feejee Islands 2; South America 24; Central America and the West Indies 9; North America 35; African tropical mainland 14; South Africa 4; Mascaren Islands and Madagascar 6; New Holland 15; New Zealand 5." Paxton gives a long list of species from about 30 different countries and parts of countries, the names of which are unnecessary to this article and would take too much space.

Their habitat extending over such a wide extent of country, their natural habit, character and constitution, &c., must necessarily differ very considerably.

Some of the species are hardy, non-climbing, soft-wooded herbaceous perennials, as in Erecta and its varieties, growing about two feet high, furnished with large corymbs of white, sweet-scented flowers.

Others are soft-wooded and climbing herbaceous perennials, as in Coccinea, which, I believe, is comparatively new and a native of Texas. I have not had this long enough to know much about it.

Others again are non-climbing, sub-shrubby and hard-wooded, growing erect 1 or 2 feet, as in Viticella nana, and others 4 or 5 feet, requiring the support of a stake, and being covered with large panicles or umbels of sweet-scented white or blue flowers as in Cœrulea odorata and its varieties. Other species are tender, evergreen, winter-flowering and require the protection of a conservatory or a hothouse.

But to attempt to describe many of these species would soon take up too much of your valuable space. The first Clematis introduced into England was our old favorite Clematis viticella, from Spain in 1569, in the reign of Queen Elizabeth, who, it is said, was delighted to be called the Virgin Queen, and in compliment to her majesty the Clematis was very appropriately and very prettily called the Virgin's Bower.

In the same year was brought into cultivation the old wayfarer of the English hedgerows, Clematis vitalba, commonly called Traveller's Jay, Virgin's Bower, Welcome Traveller, Old Man's Beard, White Vine, Smoking Cane, Cigar Plant, Pithwine, &c. One might think a plant having all these common names must be of some importance. Then came Clematis flammula, a well-known European species and called sweet-scented Clematis. After this the pretty little Crispa, a native of North America and of the Viticella type, is now becoming quite fashionable again. Next in importance, Clematis Virginiana, which I think is best of the old common white sorts, but which has no distinctive common name, I believe, and often gets confounded with the Vitalba under the name of Virgin's Bower. Besides these have been raised hosts of others, of little importance just now, down to about 1835, when was introduced Azurea or Cœrulea, now called Azurea grandiflora or Patens. Flower about 5 inches in diameter, eight sepals. Sepals somewhat recurved and reflexed, of a delicate azure blue, hence its name. About the same time was introduced Sieboldii, under the name of Florida bicolor. Flower about 3 inches across, sepals standing straight out from the disc, flat and broad, and the center filled with a rosette of purple petaloid stamens, forming a very pretty flower. Sepals creamy white. From Japan by Dr. Siebold.

About 1851, was sent to London from China, I think, by Mr. Forsyth, the grand old Lanuginosa. Flowers, 6 to 8 inches across; eight sepals, pale lavender. About 1863, was sent from Japan, by Mr. Robert Fortune to Messrs. Standish & Noble, of London, I believe, that fine old double white Clematis named Fortunei. Its color is creamy white, sweet scented, 4 to 5 inches diameter. About the same time came Standishii; color, bluish mauve. Also John Gould Veitch, a beautiful double blue or lavender blue; both by Mr. Fortune from Japan. From these last named

sorts, viz: Patens, Lanuginosa, Fortunei, Standishii and Viticella, have been derived these magnificent hybrid varieties which we have now in cultivation.

So far as my experience goes, I think the Clematis is a good thing which is destined to become as deservedly universally popular, for out-door garden culture, as the rose; and for indoors, too, for that matter. For the greenhouse, the conservatory, the parlor window, to cover rock-work or rustic arbors, or any lattice work, pillars of the verandah or porch, or any other ornamental use where flowers are desirable.

For individual specimens, trained to ornamental forms or designs on the lawn, or making good pot specimens to place about the lawn, they cannot be equalled by any other plant for this purpose and climate. For permanently bedding out in the flower beds the Clematis is superior to any other individual class or species of bedding out plant with which I am familiar. The colors are all that can be desired, and, withal, it is the cheapest bedding out flowering plant we have, for so good a thing.

Three or four dollars do not go far, even at the low price of a dollar a dozen, for bedding out plants, to fill a bed prettily. The same sum would nearly fill the same bed with Clematises the first summer, and certainly the second, with good plants to start with; for one good strong plant of Clematis will cover the space of a dozen of the others. The tender bedding plants usually die and have to be renewed every year; but the Clematis, when established, is "there," and better the second than the first year. The older the plant the younger and fresher it appears. The Clematis is well adapted to our soil and climate. It will grow where any other plant will grow and thrive, save and except under water, just in proportion to the treatment it receives. It is not at all fastidious as to soil or treatment, yet no plant is more grateful or will respond more quickly to kind and generous culture. The Clematis likes best a deep, moderately light, but rich sandy loam, well drained. After a plant has become four or five years established it will make a growth of 4 or 5 to 8 or 10 feet in height in a season, according as the plant is of a weaker or stronger habit of growth; and, if carefully trained, will cover as much space in width.

Many of the varieties of the Jackmanni and Viticella types will throw their large umbels of flowers so far above their foliage as to present one complete mass of flowers, with scarcely room for a green leaf to appear. These large umbels or panicles of flowers are made up of six to ten individual flowers, each 4 to 6 inches in diameter, usually four to six sepals of, for the most part in these types, the deepest and richest velvety purple to almost black. These types commence flowering the fore part of July and continue on till the frost kills their foliage in October or November. The different groups give us about all the colors that can be desired, from the purest white to almost black, from Azure-blue to yellow, and from green to scarlet. It is true we could wish the yellow and the scarlet could be improved in size. They are single, semi-double, rosettes and double; sweet scented and not scented. I have had them in flower from 2 inches high to 10 feet high; and also in size from 2 inches to 10 inches in diameter. I have had Jeanne d' Arc measure a full 10 inches across and Lawsoniana 9½ inches in diameter of flower. 8 to 9½ inches are quite common, in many varieties, when well grown; and size appears to be now the prevailing fashion. The flowers hold in perfection from twelve to twenty days, usually fifteen to eighteen.

I have said they are hardy. They are, and almost as persistent as a root of rhubarb, and should their tops become winter killed, from very extreme weather, they will start up in the spring like a shoot of asparagus. I have compared them to the rose. They are as beautiful in color and as sweet in perfume. But, unlike our beautiful Tea roses, which shrink and wither in the scorching hot sun and have to be taken up and coddled through the winter, the Clematis will glory in the summer's heat and scarcely wince at the winter's cold.

Hardy as they are, however, no plant will be more benefited by, or more grateful for, a little winter protection with a little littery manure or something of that kind. What varieties would I recommend for general planting? That is a rather difficult matter to decide, and must depend on the purpose for which they are wanted and on the fancy of the cultivator. The family is divided into sections or groups, not botanically, however, but for the convenience of gardeners and amateur planters.

The Montana Group—are strong growers and will flower in abundance from January to May on the old ripened wood of the previous year's growth; the flowers are only medium in size and in clusters, and excellent for cut flowers; but, of course, in order to do this they require the protection of a cool greenhouse.

The Patens Group—give us the earliest large-flowered climbers; flowers singly, from the ripened wood of the previous year's growth; mostly light colored flowers; May and June out of doors.

The Florida Group.—Large flowers from the ripened wood of the previous year's growth; but making a longer growth than the Patens before flowering, and consequently flowering later; June and July. As grown now, mostly double flowers and often sweet scented.

Graveolens Group.—Mostly rampant climbers, small flowers, often in large panicles; July to September.

Lanuginosa Group.—Large flowers, six to eight sepals; 6 to 9½ inches diameter; climbing; blooming successionally summer and autumn. Flowers on short lateral summer shoots, dispersed and continuous. This group is divided into early and late bloomers; June to October.

Viticella Group.—Mostly large-flowered climbers; blooming in continuous masses on long summer shoots; July to October.

The Jackmanni Group—are large-flowered climbers; blooming successionally in summer and autumn, in continuous masses. This group make a long and strong summer growth before flowering, hence a little later in coming into bloom. They are divided into early and late bloomers. They begin flowering about the first of July and continue till the frosts kill their foliage and flowers in October or November. A slight frost does not hurt them. They will bear about as much frost as a grapevine.

Cærulea odorata Group.—Non-climbing; subshrubby; flowering on summer shoots; July to September.

Erecta Group.—Non-climbing; herbaceous; flowering, June to September.

These two latter groups are not very fashionable in this country, so far as I have seen, though a few have been grown for many years.

I will endeavor to name a few kinds from two or three of the principal groups; but, of course, a full description cannot be given for want of space.

Patens Group.—Albert Victor, deep lavender; Fair Rosamond, bluish-white; Lord Gifford, rosy lilac; Lady Londesborough, silver-gray; Miss Bateman, pure white; Mrs. Quilter, white.

Florida Group.—Aurora, semi-double, pinkish-lilac; Countess of Lovelace, double, bluish-lilac; Duchess of Edinburgh, double, pure white; John Gould Veitch, double, lavender-blue; Lucie Lemoine, double, white; Venus Victrix, double, pale-mauve.

Lanuginosa Group.—Alba Magna, finest white; Angelina, pale bluish-mauve; Blue Gem, pale cœrulean-blue; William Kennett, bluish-lavender; Duchess of Teck, white; Fairy Queen, pale flesh color; Henryi, beautiful creamy-white; Lawsoniana, rosy-purple.

Viticella Group.—Lady Bovill, soft grayish-blue; Madam Grange, maroon crimson; Mrs. James Bateman, reddish-lilac; Viticella rubra grandiflora, claret-crimson; Viticella venosa, reddish-purple.

Jackmanni Group.—Prince of Wales, deep puce-purple; Alexandra, reddish-violet; Gipsy Queen, dark velvety purple; Guiding Star, claret-crimson; Jackmanni, intense violet-purple; Rubella, deep velvety claret-purple.

Rochester, N. Y.

[A chapter on the diseases of the Clematis would be a welcome supplement to this excellent communication.—Ed. G. M.]

EDITORIAL NOTES.

NEW STYLES OF CHRYSANTHEMUMS. — One would have thought that after the immense variety florists have produced, there was room for no more new styles among Chrysanthemums. But the French have produced a race that has the ray petals hang down closely around the flower stem like silk, while the "anemone" formed crown represents the button of a tassel. In one of these recently raised, the silken threads as we may call them, extend down 5 inches, while the crown represents a perfect hemisphere 4 inches across. This variety is called Fabias de Madernaz.

PLATYCODON GRANDIFLORUM.— Herbaceous plants have—many of them—strange habits of dying unaccountably, and leaving their places in the flower border without our knowledge. But there are some very beautiful things that have the faculty of holding on in spite of all vicissitudes, and one of the bell-flowers, Campanula grandiflora, or Platycodon grandiflora, as botanists prefer to call it, is one of these. There is a white and a blue variety.

FRINGED PETUNIAS.—These are coming into popularity. The edges of the corolla are fringed like some pinks, and being double they have a unique appearance.

HYACINTHUS CANDICANS.—In reference to this plant, noted specially by Mr. Krelaage in his interesting paper on bulb collections in our last, Mr. Baines says in the *Gardeners' Magazine*:

"The Galtonia, generally known as Hyacinthus candicans, is invaluable for the cool-house. For late summer flowering, few plants look better in a house of this kind; its tall spikes of large white bells are particularly effective when stood in front of dark green-leaved plants such as camellias, and other things of a like character, and which play a principal part amongst the permanent occupants. The plants should be placed singly in eight or nine-inch pots, in good loam, with a little

sand, and some rotten manure added; after which they may be plunged out of doors, and covered slightly over with some old tan or coal ashes, so as to protect them a little from severe frost. In the spring, the best way is to keep the pots plunged in coal ashes, giving water through the summer as required. Manure-water whilst the plants are in active growth, strengthens them much. To have them when grown in pots as strong as desirable, it is necessary to give this kind of stimulant, as when their roots are kept within the limited space which a pot affords, they necessarily cannot produce such large heads of bloom as they would where they could have the unrestricted run of a good bed of soil, unless they have extra stimulants to help them."

IMPROVED ASTERS. — The cultivation of the Aster has for a long time occupied the attention of florists and those interested in beautiful flowers; and, like the chrysanthemum, it is now at its height.

We have before us a lithograph of a collection of Victoria Asters, raised by Ernst Benary, of Erfurt, Prussia, and they are without doubt, the largest and best we have yet seen. They are of all shades and colors, from a bluish white to dark purple and crimson. They run in size from 4 to 4½ inches in diameter.

IMPROVEMENT OF THE WALL-FLOWER.—This old and ever popular favorite is getting a good turn from French hands, and is being improved in a wonderful way. They have many classes of them. Under their name of "giroflee" all Frenchmen make a pet of the wall-flower.

ANOTHER UPRIGHT POPLAR.—Last year we saw a new introduction that grew upright and as close as the Lombardy poplar. It is a variety of the common white or Silver poplar. It appears in foreign catalogues as Populus Bolleana.

SCRAPS AND QUERIES.

LILY DISEASE.—"Mrs. K.," Baltimore, Md.—The Gold-banded Lily, and other lilies, "get weaker every year and finally die" because of a fungus. No known cure has been discovered. It may be the same or a close ally of the one that causes rust in the gladiolus.

CEDAR OF LEBANON IN VIRGINIA.—Mr. J. Hotchkiss says: "We have a fine Cedar of Lebanon growing here in Staunton on our limestone hills. It was planted about 30 years ago, and is now about 40 feet high."

A DOUBLE LILIUM SPECIOSUM.—A correspondent from Ottawa, Canada, sends a photograph of a lily that had twelve petals and twelve stamens. This is not a double lily in the usual meaning of the word; but the double number of the usual parts, without any change of stamens to petals, is perhaps of still more interest to the botanist, though the florist may not see as much.

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

GERANIUMS.

BY VALENTINE BURGEVIN.

Without entering into a full explanation of the origin and home of this class of plants, which is very ably described by our distinguished horticultural writer, Peter Henderson, in his "Hand Book of Plants," a work deservedly appreciated by all who are interested in the kingdom of flowers, I intend hereby to show how to cultivate, produce, propagate and bloom them in a most approved manner, calling to my aid my own long experience. There is hardly a plant which is more popular among all classes on the globe than what is generally called the horse-shoe or zonal geranium, "pelargonium inquinans." While fashionable plants require a fortune to buy and grow them satisfactorily in large collections, the laborer and his wife can enjoy the geranium, and on this account it deserves to be brought before the public and permitted to present its beauty and glory as well as any of its charming sisters. The geranium is found in the homes of the humble and industrious, but it loses nothing of its inherent beauty on that account. For where can a natural beauty be oftener found than among the farmers and their daughters?

When I became first acquainted with the geranium, there were only a few varieties and very imperfect; a few shades of red, one of pink and, some time after, a very poor white. The Tom Thumb geranium was the first to elevate its genus to a loved plant, and large masses of them were planted in clumps and made a brilliant appearance in parks and gardens. Then for a long time there was a standstill, and it was thought that this was the extent of the mission of the geranium, until gradually better more perfect and more beautiful varieties were developed and exhibited. Amateurs interested themselves more and more in their cultivation, and consequently newer and more distinct varieties were produced, so that the geranium became a plant of commerce and was generally cultivated everywhere. Not only exquisite flowers, like hardly any other plant, with so many shades of red, pink, salmon, large clear white, variegated, double and single, but also the most beautiful leaf geraniums with splendid gold, bronze and silver leaf are now produced exhibited and advertised in all leading catalogues.

The ivy geranium "pelargonium peltatum," likely as old as its sisters, has been wonderfully improved of late in double as well as single flowers, and with remarkably distinct and variegated foliage. They are not only delightful for hanging baskets, but also grow on trellises, or in any other way when handled by a skillful hand. Late varieties are introduced and sold by V. P. Simmons, florist, Geneva, Ohio; V. H. Hallock, Son & Thorpe, Queens, N. Y., and other leading florists, which they advertise in their catalogues, amongst the latest novelties in geraniums of striking qualifications. But the ivy-leaved are actually charming with their immense trusses of both double and single flowers, florets over two inches in diameter and of exquisite colors. New varieties from England, France, Germany and the United States appear yearly, and oftentimes create a sensation among lovers of geraniums, who are everywhere to be found where the plant can be cultivated.

The propagation of the geranium is universally known. Every woman knows how to slip or grow it from cuttings, but the most interesting manner is to grow it from seeds, which are carefully gathered from the best varieties and which are likely crossed either accidentally or by scientific processes. These seeds, sown in February where they can vegetate, will in eight or ten days be up, and in three or four weeks the plants should be transplanted, and again and again transplanted until they can be safely planted out of doors. In order to grow strong plants, especially if we are compelled to plant them close together for lack of room, the largest leaves should be removed, which can be done without injury. After they are planted about 15 inches apart, kept clean from weeds and the soil well loosened, a careful observer can be already amused by observing the habits and formation of the plant and its foliage. In the latter part of July they begin to flower, which causes daily a great deal of excitement. The color of the seedling Virgin Bloom appears to be brighter, the trusses larger than in the others; and thus we are very apt to discover many extra properties in these our children, which we will justify by getting better and better acquainted with the characters of our production.

The principal condition of an introduction of a new praiseworthy geranium is a new color, a large well formed truss over a well proportioned plant, with not too large leaves, round florets and round petals. Only such seedlings may be exempted from these absolute conditions which have otherwise extra endurable properties. Judging from the present indications of the geranium, the future developments of the flower will be such as will resemble the pelargonium variety, with more distinct colors and marks on the two upper petals. I have planted for several years past about 1,000 seedlings yearly, well advanced plants; I took good care of them, watched them closely, and after they commenced flowering they gave me great pleasure. We potted about 200, discarded all of them which we deemed to be worthless, and when frost came there was only about one-eighth of them which showed no sign of flower buds. Of my 200 seedlings I selected about 50 which I thought were good and somewhat different from other sorts, but by more particular examination I reduced the number to 24, then to an average of about 10 a year, which were worth reserving and are distinct varieties. The value of a seedling geranium can not for certain be established before one year. As they may decrease as well as increase in their properties, those who wish to show their esteem for a person or locality by naming a new variety of a plant after it might be obliged to re-name it. So they should not be too hasty in selecting a subject for immortality. The few which I have named after some honorable persons in our immediate neighborhood, I hope will be as favorably known as their distinguished namesakes.

Some geraniums bloom by crops. Oftentimes I have counted on a one-year-old plant as high as 18 flowers in full bloom. Others again are all the time in bloom, while others have very large, beautiful and distinct trusses, but are shy bloomers. If a special apartment or a part of the house

could be devoted to geraniums, all in bloom tastefully arranged, the colors well mixed, no other plant will afford a more constantly attractive show during the whole winter season than the geraniums, because if a plant be for a little while flowerless it may easily be replaced by another one in flower from the balance of the collection. It is beneficial and adds appearance, and causes them to flower more abundantly, if from time to time a proportion of the coarsest leaves is removed, as the air can better circulate and they receive thereby a better form.

I have frequently heard the remark from visitors that their geraniums were full of leaves but no flowers. They say, "I don't understand why your geraniums are so prolific; I guess you can talk to them and they know you." I answer, "There is indeed something in that." Any one who has handled an article for years has gathered experience and knows exactly what is needed, if he has reflected deeply on his operations. The removing of the leaves alone, however, would not do much good if the plants were not treated properly otherwise. The geranium when grown in pots in winter in a moist temperature of from 45 to 65 Fahrenheit and placed as near as possible to the glass, transplanted at least twice in rich loamy soil and clean pots—"give them a little air in mild weather, and mix once in a while fertilizer in their watering—" when geraniums are so treated they will undoubtedly be in full bloom all winter, even in December and January. My geraniums were admired by all who saw them. I often thought that their trusses were larger and more perfect than in summer. Some trusses measured over five inches in diameter. Of course there must be such ones selected as are inclined to bloom in winter, for it is certain that some varieties bloom better in summer. According to locality, all colors and shades are required to exhibit an accomplished variety. Together with the newest introductions, my collection consists principally of my own raising, and comprises almost all colors in geraniums. I have kept up, besides, a few standing varieties such as Rev. Atkinson, Dr. Denning, Surface Beauty, Du Surenne and two or three others. There are now splendid double kinds, which bloom as well as single ones, of all colors, even some with variegated leaves. To keep geraniums over winter, for no other purpose except to plant them out again, all the leaves should be taken off, and roots planted in a box close together and placed in a dry cellar, where they will hardly need any attention except to keep them from frost.

When the culture of plants and flowers is so interesting, and causes so much entertainment and pleasure, one would think it should be universal; besides, the geranium is a life-long companion, wandering with the household furniture from place to place; and the good housewife makes a special request to her husband not to forget her geranium. In large parks and gardens, where it takes hundreds, yes thousands of plants for one bed, if planted by a skillful hand, where can there a more brilliant effect be found than in such a flower bed? The variegated leaf geraniums especially are precious for edging. One of the noblest amusements is to be found in the floral kingdom, where flowers are cultivated with love. There peace and harmony will prevail, and the blessing of Heaven will follow the deed.

Kingston, N. Y.

[This excellent article has appeared in a local paper, the *Kingston Freeman*; but has been sent us by a correspondent with the remark that it is well worth re-publication in the GARDENERS' MONTHLY, an opinion we heartily endorse.—Ed. G. M.]

NOTES ON SOME NEW OR RARE PLANTS.

BY W. A. MANDA.

Anthurium Andreanum.—Certainly there was not another plant that was so much spoken of as this noble arad, when first introduced from New Granada, where it was discovered by Mr. Ed. André, the well-known French botanist, whose name this plant justly bears. The plant is of compact habit, leaves are oblong-cordate of leatherly substance, the stalk appears with the new leaves bearing a brilliant scarlet spathe of large size and good texture, irregularly corrugated like the ear; the spadix is white and yellow. Grows readily in the warm house potted in sphagnum, charcoal and potsherds and requires good supply of water during the growing season. Propagated by cutting the plant into pieces, each having a good leaf, and potted in the same compost as the plant.

Crinum amabile.—Bulb very large, cylindrical; leaves broad, glaucous, 2 or 3 feet long; flower spike 18 inches long termined by an umbel of flowers (twenty-six on our plant); each petal 5 inches long, light purple, with a dark stripe of the same color in the middle, dark purple on the outside, stamens purple, pollen yellow. To be grown to perfection, it requires to be grown in large pots with rich compost. Propagated from seed, also from young plants, which the plant produces at the base. Native of East Indies.

Begonia Socotrana.—This very fine plant is quite distinct from any other in the genus. The tuber produces a quantity of bulblets, the leaves are orbicular, peltate light green, the flower stem rises 8 to 12 inches from the tuber and terminates with a head of bright, deep rose flowers of good size and substance, lasting a long time in perfection. Besides its ornamental quality it has also the merit of being strictly a winter flowerer, which adds greatly to its value. As the name indicates, it was discovered in the Island of Socotra, by Dr. Balfour. Culture: to be kept at rest during the summer, re-potted in the fall in good compost, started in gentle heat and kept moderately moist. Propagated by means of the bulblets.

Cypripedium Spicerianum.—One of the prettiest Lady's Slipper from East Indies. The leaves resemble C. villosum, the flower is borne singly on a stem 4 to 6 inches high. The dorsal sepal is nearly 2 inches long, pure white with a purple stripe in the center, petals green, undulated lip greenish yellow, column purple and white. Grows best in pots with sphagnum, fibrous peat, charcoal and potsherds, requires good supply of water during the growth, and should not even in the resting season suffer from draught; it requires a temperature of 60° Fahrenheit. Propagated by division.

The above in flower at the Cambridge Botanic Gardens, as well as the following orchids:

Cypripedium hirsutissimum,	Cœlogyne speciosa,
" barbatum,	Oncidium Barkerii,
" venustum,	Epidendrum variegatum,
" insigne,	Lælia autumnalis,
" Hookeræ,	Angræcum eburneum,
" Rœzlii,	Cymbidium sinense,
Calanthe Veitchii,	Dendrobium chrysanthum,
" vestita,	Maxillaria punctulata,
" " lutea oculata,	" variabilis,
Lycaste Skinnerii,	" " var. lutea,
Cœlogyne cristata.	

GLAZING.

BY THOMAS ROBERTS.

With your permission I venture to take part in the discussion relating to the glazing of plant houses. Several years ago a severe hail storm demolished the roofs of a number of houses then in my charge, and with a view to saving from the wreck all that was possible, the work of re-covering with glass was pushed with vigor. The progress was so slow, however, in consequence of digging out the old putty, etc., that the loss from exposure was greater than from the hail and broken glass combined. A short time after that occurrence two forcing houses were constructed under my supervision, and the disaster being fresh in mind the following plan of glazing was adopted:

Instead of the stiles being rabbeted for puttying in the usual manner, they were grooved just wide enough and deep enough to permit the glass to slide easily but not too loosely. The panes (to which a little thick white lead was applied to the upper edges) were fed successively into the grooves from the lower edge of the roof, and the only fastening found necessary was one or two copper tacks at the foot of the last pane in each row of glass. Space for expansion was left at the top, and although breakages were few during the remainder of my charge, repairs were easily and rapidly made and without having to mount the roof. Little difference as to escape of heat was noticed at the time, but I am under the impression that a careful test would result in favor of the grooving system. *Green Cove Springs, Fla.*

THE GOOD ECONOMY OF GAS TAR.

BY A. R. STARR.

Having read several articles in the MONTHLY in regard to the injurious effect of gas tar on hot-water pipes, also the one in the March number from the Superintendent of Government Grounds, of Ottawa, Canada, I think the writers wrong in warning all never to use gas tar in any connection whatever in greenhouses, as I consider the proper use of it a great saving in the building and repair of houses, and will give you my experience in support of my belief. First, will state my houses are bank houses, the walls being of stone and about level with the ground, the sill of wood resting on the wall. Five years ago I rebuilt one house that had been built four years; the sill ends of rafter, also rail of sash resting on the sill, were rotten. Having seen the effect of gas tar in preserving wood when exposed to dampness, I determined to try it; having my frames prepared before placing it, I gave the sill ends of rafters, also lower rail of sash, two heavy coats of hot tar; building new benches I treated the ends of posts and the bottom of benches,—in short, all the wood where moisture was liable to remain,—the same, and today, after five years, the parts thus treated are apparently as sound as ever. Since then I have used it in repairing of benches and keeping it on hand for that purpose, have never experienced detriment from its use, and after two or three days all traces of unpleasant odor disappear. I would say that in connection with the tar I give it a heavy sprinkling of coarse sand. I am satisfied

that the use of it has saved me many dollars as well as much hard labor. I can readily understand that it might injure by being on the heating pipes where the heat was sufficient to melt or burn it off, but if used as I have mentioned there is no danger, and it is certainly a great saving in time and money in the building and repair of houses.

Joliet, Ills., March 15th, 1885.

[It is too often the case that evils incident to the use of an article, obscure the real good it may do. The worst decay in lumber comes from fungus, or as some would say dry or wet rot. But this fungus cannot grow when gas tar is present. Mr. Starr makes a good point here for gas tar. But it must also be remembered that the dark color of tar absorbs heat, and therefore tar is only a preservative when it is used in the shade. A tarred fence or a tarred roof will not last as long as one untarred, because the sun's heat really chars the wood, and causes it to crumble very fast. The charring is worse than fungus. For fence posts under ground, as well as for the purposes noted by our correspondent, gas tar is a very useful article.—Ed. G. M.]

FLORAL NOTES FROM NEW ORLEANS.

BY M. H. LESTER.

I wish some benevolent person would send me for love or money (I have abundance of both) a plant of Lasiandra macrantha, var. floribunda. I have L. macrantha, but this life is almost too short to wait for it to get strong enough to bloom.

If there be such a thing as a poor Cattleya, I should call Triana one. It is such a great, overgrown looking flower. I have two others in bloom along side, one a variety of the labiate section, and the other C. Eldorado; both, I think, better colored and marked; still, Triana is very interesting.

I grow several Francisceas—namely, Hopeana, latifolia, macrantha, and calycina major; the latter is the best of all. The flowers are 3 to 4 inches across; good dark blue, changing to rose; of good substance, and the most admired of anything I have in bloom at present.

The first season we had Clematis coccinea, I waited all summer for the flower buds to open. Now, I think my Pavonia Wrightii is going to act the same way; it has been covered with buds for the past two months. I can not see any beauty in such miserable things.

I believe if there be any plants that never do bloom I get them all. Now is the first time Toxicophelia spectabilis has bloomed on this place; the flower is not conspicuous, but it fills the house with perfume.

A number of articles were published in the MONTHLY some years ago; I believe, under or over the heading of "Recollections of a Cactus Man." I am sorry I was not in a position to save my copies. Have those articles ever been published in book form? If not, they ought to be. But few people will ever realize how little they know about Cactuses, until they visit the Mexican exhibit at Horticultural Hall, and also that of T. H. Wisher, of Texas, for which have been awarded 10 first prizes. Those collections embrace some specimens that would grace any exhibit in the world; and every inch of space occupied by them is full of interest. I believe embrace is not the proper word to use with respect to Cactuses.

There are between two and three hundred varieties in the exhibits, all the way in size from a button up to more than one could get their arms around.

The exhibit of Agaves is also very complete. I noticed a beautiful specimen of A. Shawii coming into bloom.

In connection with the exhibit from Jamaica, in Horticultural Hall, there is also an exhibit of great interest in the Main Building, including roots and herbs used for medicinal purposes, manufactured articles from native fiber of different plants; ladies and gentlemen's hats made from a variety of Carludovica, that for style and finish get ahead of anything in the Tuscan or Panama line. I take the liberty of sending you by this mail a tuber of Exocgonium purga, or Ipomœa Jalapa.

Gardener to Prof. Richardson, New Orleans, La.

ENCOURAGE WINDOW GARDENING.

BY T. BENNETT.

Whenever you make reference to window gardening, as you often do, I am very much pleased. When we walk along the streets of our cities and inadvertently give a glance at a few well-cared-for, well-kept flowers blooming in a window, one forms a good opinion of the inmates; especially of the good lady of the house. We naturally say: "There is a good exhibition of taste," and good taste implies refinement of manners. Occasionally the vicious love flowers—but usually all the virtues that can bless a happy home are found where flowers evidently love to dwell.

Here, too, is the source from which our city florist derives his principal compensation and return for the many months of watchful care bestowed upon his young plants, till he sees them coming into bloom.

The love of flowers and plants inspires a taste for all that is beautiful in nature. Children in general love flowers and should be encouraged in their love, and be taught how to grow and care for them. Anything grown by them obtains a particular charm, only known to themselves. How many seeds are thrown away by children thoughtlessly, that would to them be very interesting when partially grown. After eating a delicious peach, the stone should be planted three or four inches deep in the ground, and the next year will delight the young eyes of the planter to see the young peach tree growing nicely. Young fig plants may be raised from most of the figs sold in the stores by sowing in any old vessel partly filled with fine rich earth, and will make interesting plants. And nearly every seed of the date, that children love so much, will grow and in a few years make a pretty little palm tree (Phœnix dactylifera). Lemon and orange seeds will also grow, when planted in the spring, and form very interesting plants—but of course these young orange, fig, and palm trees being natives of warm climes, must be brought into the house in winter, and will make a variety among the window plants, and though not very showy will be interesting to the growers and encourage their taste for plants; very much from the fact of growing them themselves.

With children a fanciful idea is often as great as the reality, giving as much real pleasure; and their taste in this way should be encouraged. When young Miss Lucy sees her palm tree growing she calls in all her playmates to see it and partake of her joy, and she goes jumping around in an ecstacy of delight, not perhaps knowing that that young palm tree may live several generations. Its longevity is said to be very great.

> And Lucy's child, and grandchild too.
> In coming years with pride may view;
> And many a visit fondly plan'd
> To see the plant from grandma's hand.

Nearly every cocoanut sold in the shops will grow and form a pretty palm tree which when grown is called the Cocos, but these require the care of the experienced gardener, must be grown in strong moist heat, and are well adapted to adorn our greenhouses and conservatories.

Chambersburg, Trenton, N. J.

[This very suggestive letter of Mr. Bennett we give with pleasure. Much satisfaction has been had from memorial trees, planted at certain dates in honor of certain events. But it is not always in season or convenient to plant a tree. A seed which might, as Mr. Bennett says, be carelessly thrown away, might be sowed on some particular occasion, and the young plant become a constant memorial for several generations.—Ed. G. M.]

TO MAKE HANGING BASKETS.

BY A. G. LEWIS.

For years I have made very beautiful hanging baskets in the following way: I take a stick as thick as my wrist and 18 inches long. To the stick I fasten a handle 4 inches from each end of the stick. I use very strong wire for the handle. When the handle is secure I commence rolling and tying moss around the stick until I get it entirely covered, of a nice shape, and about 8 inches thick, slightly tapering off at both ends. Then I secure to it old roots. That being done, I finish by again adding one or two layers more of moss. The plants I prefer are Begonias, of the Rex varieties. Those who have the means of cultivating Orchids would find the above a successful way for most of their varieties, not only on account of the success in growing and blooming them, but the advantage in using the baskets in decorating in the house, as they can be hung, say for an evening, in a bay window or such situation as would be deemed best. *Youngstown, Ohio.*

COAL TAR ON HOT-WATER PIPES.

BY THOMAS LAWRANCE.

I have heretofore given my only experience in removing coal tar from hot-water pipes without burning them. I will re-state that the pipes in question were painted with tar from the gas works here. A wash made with six pounds of potash to about ten gallons of water was applied with a swab boiling hot. The stuff left the pipes in inky blackness, and by going over them two or three times were left as clean as when first cast; and there has never been a trace of tar in the house in all these years since. The pipes are ordinary 4 inch cast iron, in lengths about 5 feet, called soil pipe; made by J. L. Mott, N. Y.

Ogdensburg, N. Y.

EDITORIAL NOTES.

PLATYCERIUM GRANDE. — The creature we figure is not a mollusk but a fern. It is remarkably like a shell fish however, and the illusion has been favored by its owner planting it in a large

shell, suspended in his conservatory. It is customary to call the green blades which come out from the crown and spread like huge ears around the base, barren fronds. They are, it is true, always barren, but the erect growths are also very often barren, though the spores when they appear are towards the ends of these erect fronds. It is known as the Elk's-horn fern, the erect fronds not unlike horns of the Elk. This is especially true of the older and more common species, Platycerium alcicorne. The species here figured is a much rarer plant, the erect fronds are not as deeply divided as in the common one.

It was a good thought to plant it in a shell.

Platycerium grande.

Our engraving is from a photograph kindly communicated by Mr. Henry C. Gibson of Philadelphia, in whose beautiful conservatory the plant is growing.

ANOTHER ROSE COMING TO AMERICA.—It is said that "Her Majesty," another of Mr. Bennett's, has been bought by Mr Evans of Philadelphia, for $2,500.

SCRAPS AND QUERIES.

TENDENCY OF SUNSET ROSE TO MAKE BLIND SHOOTS.—Mr. A. Williams, Sharon, Pa., writes: "This winter my Sunset roses have shown in a marked degree a tendency or disposition to make blind instead of flowering wood, and I venture the inquiry, doesn't the practice of propagating from blind shoots make the matter worse than it would be were the young plants struck from flowering shoots? My practice has been to strike all the blind wood, and thereby get as many buds as possible, and I incline to the belief that this practice is general among florists, for I have talked with a number this winter and they all do the same way as myself with any new or scarce varieties.

I think that this trait or habit to make blind wood can be transmitted to the progeny of a rose, or any other plant, by continually propagating from such blind wood. If like begets like, why not in a rose as well as other things?

Let some of the older heads, who have made the rose a specialty, enlighten the readers of the MONTHLY on this subject. It may be that I am alone in this complaint, but I think I am not, as I have seen a good many beds of Sunset this winter and there were too many blind shoots in all of them."

YELLOW DOUBLE OXALIS.—W. P. Simmons & Co., Geneva, Ohio, say: "We notice in the two last numbers of the MONTHLY articles on the Double Oxalis. Believing this refers to the one offered in our catalogue, we would say we purchased our stock of a florist in Indiana, as a new double yellow variety named lutea plena, which from the description given us of the color and size of flowers we were led to believe was an entirely new and distinct variety. Our first plants bloomed with us during the past few days; the flowers are of large size, and nearly the same in color as chrysanthemum Mr. Geo. Glenny, and quite double. We are tempted to believe, as Mr. Slocombe says, it is Cernua plena, nevertheless it is a very pretty little plant."

THE BRIDAL ROSE, BLACKBERRY.—Mr. John F. Clark says: "I send you flower of the 'Bridal Rose,' Rubus rosæfolius. This plant I consider well worthy of cultivation, yet it is rarely met with nowadays. I am sure the florists could use this to advantage. It is a profuse bloomer. The flowers are pure white, very double, and as large as a Camellia. At this date I could cut from a plant in 9-inch pot from seventy-five to a hundred flowers."

[This is the new form introduced of late years, and much superior to the old one that has been in cultivation for nearly a century. A well-grown plant like this of Mr. Clark's must be a beautiful object.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

The most paramount question with the fruit gardener is the destruction of insects. We have to confess to a belief that all schemes for their wholesale destruction have proved failures, and that our best hope is in their individual destruction. The different kinds of moths and flies may be entrapped by the thousand, in a persevering employment of wide mouthed bottles of sweet liquids hung about the trees. The curculio, whose most tempting allurements do not lie like moths in the way of sweet food, but in finding a nice juicy nidus for the deposit of eggs wherewith to perpetuate its species, can be slain by the hundreds, by perseverance in the shaking process. A snag, made by sawing off a small branch a few inches from the main trunk of the tree, should be secured on each, on the point of which to hammer,—otherwise the bark of the tree would be irreparably injured. With a sheet spread under the tree, and a sharp, quick jar with the hammer, all the pests then on the tree may be secured and destroyed. They are rather lazily inclined, but still a few will come from your neighbor's trees; but a few jarrings occasionally will keep them down. Experience has shown that this course, which only demands a little labor, is much more effectual than the thousand schemes that have been devised for hanging various charms about the branches, and then kneeling down and crying on Hercules for assistance.

When, however, the plum tree grows stout, even the snag plan of jarring is not wholly successful, and the Geneva plan of having a padded end to a long pole—a sort of crutch—by which the larger branches are jarred over the sheet, is found a great improvement.

If large fruit is wanted thinning assists. Strawberries are increased in size by watering in a dry time. Fruit should be allowed to bear only according to their strength. If a transplanted tree grows freely it may bear a few fruits,—but bear in mind growth and great fruitfulness are antagonistic processes.

Handsome forms are as desirable in fruit as in ornamental trees. No winter pruning will do this exclusively. It may furnish the skeleton—but it is summer pinching which clothes the bones with beauty. A strong shoot soon draws all its nutriment to itself. Never allow one shoot to grow that wants to be bigger than others. Equality must be insisted on. Pinch out always, as soon as they appear, such as would push too strongly ahead—and keep doing so till the new buds seem no stronger than the others. Thus the food gets equally distributed.

Where water can be commanded, there is nothing so profitable as to well soak the soil about small fruits; first about the time that they have set their fruit. Much of the value of this operation, however, will depend on the nature of the soil. The advantages are least in a tenacious, and greatest in porous soil. It is said that an ani-

mal derives most benefit from food when it is hungry before it begins to eat; it is certainly so with plants. Water applied to soil already wet is an injury; and water never has so telling an advantage on vegetation as when every leaf is about to wither up for the want of it. A plant that never seems to want water is in a very doubtful condition in regard to its health.

In all the best specimens of small fruit or vegetable gardening, however, special efforts are made to see that the soil is not tenacious. Under draining is excellent where water does not run readily away.

In summer pruning or disbudding, it is also worth while to watch for shoots pushing stronger than others, and always take them out. This is the only way that shoots of equal strength can be encouraged in every part of the tree. This is particularly true of grapevines. If a shoot once get the start of the others in strength and vigor, the others will gradually get weaker to the other's increasing luxuriance.

As to the best system of pruning grapes, there are several "schools," all contending that their views are "decidedly best." In such cases we have generally found there is much to admire in them all—situations and peculiar circumstances deciding the point in each individual instance. There are a few points incontrovertible to insure success, and it matters little what system of pruning is followed, so that they are secured. First, a healthy set of roots of the previous year's growth is essential to produce vigorous start of growth the year following. Secondly, after starting, these roots can only be kept vigorous by encouraging an abundance of healthy foliage, to be retained on the vine as long as possible. Thirdly, the leaves of the first growth are at least of double the value to the plant than those from secondary or lateral shoots; they should, therefore, be carefully guarded from injury. Fourthly, checking the strong-growing shoots strengthens the weaker ones, equalizes the flow of sap to every part of the vine, and insures regular and harmonious action between all the parts. Any system that secures this, does all that is necessary for the general health and vigor of the vine; and where some special objects are desirable, such as dwarfing, particularly early bearing, productiveness at the expense of longevity, special means must be employed to bring them about.

In the cultivation of garden crops, the hoe and rake should be continually at work. Weeds should be taken in hand before they are barely out of the seed-leaf, and one-half the usual labor of vegetable gardening will be avoided. Hoeing or earthing up of most garden crops is of immense advantage in nearly every case. One would suppose that in our hot climate flat culture would be much more beneficial; but a fair trial, say on every other row of a bed of cabbages, will show a great difference in favor of the earthed-up plants. It would be easy to explain the reason of this, but in this column we try to confine ourselves to "hints," and leave reasons to our other departments.

In sowing seeds it is well to remember that though the soil should be deep and finely pulverized, a loose condition is unfavorable to good growth. After the seeds are sown, a heavy rolling would be a great advantage. The farmer knows this, and we have often wondered that the practice never extended to garden work.

COMMUNICATIONS.

DIMINISHED CROPS THROUGH INJURY TO FOLIAGE.

BY JAMES HUNTER.

Last season I had rather a singular experience in trying to raise a few peas for family use. On the night of the 29th of May we had a very severe frost, so much so indeed, that the ground was frozen to the depth of 2 or 3 inches. I had planted Henderson's First of All, Laxton's Alpha, Champion of England and American Wonder. The first three had been bushed and were about 18 inches high when the frost killed the buds that had begun to make quite a good show for fruit. The American Wonder were in the same condition, the vines remained green, (except here and there a leaf could be seen that had turned yellow,) but looked as if their growth had been stunted and remained so for several days. I watched them closely during this time to see what the effect of the frost would be, was about getting disgusted with them and was going to pull them all up and throw them away; but while examining them one day, I found that the American Wonder was sprouting at the roots, and in a few days I noticed that the others had begun to grow again. The new branches on the American Wonder blossomed and I had about one quarter as many peas as there should have been. The First of All and Alphas gave me more than half a crop, and Champions nearly a full crop, not having been so much injured by the frost as the others; but oh, didn't they mildew though. I said they bore nearly a full crop; well, so they did, but one-third of them could not be used.

I had also turned out some corn which I had raised in pots in my hot-bed. I covered this corn with flower pots, and when I uncovered it I found that nearly half of it was completely killed by the frost; on examination I found that where the flower pots had not touched the ground all the way around, the corn was not frozen. This was the case with tomato plants, squashes and beans, that had been covered in the same way. Can this be accounted for by there being a free circulation of air inside the flower pots, being at the same time protected from the frost? Nature gives us some queer things to think about sometimes, and if we profit by them we may be able to protect ourselves and our plants also, from a great many ills which might otherwise befall us.

I also had some very fine cauliflower and cabbage plants set out, and were growing nicely; the frost killed the cauliflower but the cabbage plants were very little injured. Beets, onions, carrots, &c., were not injured. *Glendale, Mass.*

[This is a very interesting piece of experience, and yet is in the line of similar observations which have been reduced to an axiom, that whatever tends to injure the growing foliage, tends to reduce the vital powers of a plant.—Ed. G. M.]

ONE HUNDRED AND TWENTY BUSHELS OF APPLES FROM ONE TREE.

BY D. O. MUNSON.

In your December number a correspondent reports an apple tree bearing forty-three bushels of apples in one year, and in your March number Mr. N. S. Platt calls attention to a tree in Cheshire, Conn., of unusual size which had produced over one hundred bushels in one year. The writer of this remembers a tree standing on the farm of P. S. Dodge, Montgomery Co., Md., eleven miles north of Washington, D. C., that bore in the year 1859, one hundred and twenty bushels of apples. The fruit ripened in September, and was good for cooking and tolerably good eating when fully ripe. I did not know the variety and it was probably a seedling; the tree was of immense size with several branches as large as an ordinary apple tree. I also know another tree planted forty years ago on a part of the Munson Hill farm, now owned by Judge J. H. Gray, Falls Church, Va., that bore in one year seventy bushels of apples. This tree was the Newtown pippin, when planted, but twenty-five years ago the writer cut off the tops and grafted it to Tewksbury Winter Blush. This tree is still living, is in a healthy condition and bore last year, but not a full crop.

Falls Church, Va., March 6th, 1885.

NOTES FROM ZANESVILLE.

BY A. J. M.

Seventeen degrees below zero has killed all the peaches and most varieties of grapes. Catawbas, Hartfords, Nortons, Brightons, Jeffersons, and even the white Concord seedlings, Martha, Lady Belinda, Antonette, Eva, the buds are mostly killed, while Worden is not. Rogers Hybrids are all killed. Concords and Delawares and Ives are not hurt much. It was quite severe on shrubbery. The Japan Snowball (V. plicatum) and roses are killed to the snow line. Magnolia buds are injured. Rhododendrons are browned in leaf and bud. Some of the broad leaved varieties of Retinosporas are browned, while erioides and plumosa are not. I have a Lawson cypress, 6 ft., that is hardy, the only one not killed several years ago.

The Japan Maples I have,—stand the hottest sun, dryest summer, and coldest winter. They stand the sun as well as Schweidleri at least, and no place is complete without them. I find Azalea Mollis quite tender; it has to be shaded and watered in summer and protected in winter. The Ghents are hardy.

Grape Rot.—There is not much use in giving remedies for it, unless you know what the disease is. Two or three diseases are called rot, that no more resemble decay than blight or mildew. The most prevalent disease in this section, Phoma uvicola is called "rot." This spore has destroyed hundreds of tons of grapes in this section without regard to soil or methods of culture. Nothing short of protection from moisture will prevent it. It is on the wild grapes in the tree tops. There is another spore that affects the stems and fruit, that is called mildew or mottled rot. This affects the Catawba mostly, while Concords are exempt. This like the Uvicola is a wet weather bird.

White Grapes.—There is just a little senseless mania in regard to white grapes. That color or want of color is no more desirable in grapes than in peaches and apples. Last year the Martha and Lady were not so salable in some markets as the Concord, and did not bring half as much in the Chicago market as the Delaware. Some wanted the Martha and Lady. At present I want neither

and what I have left will be grubbed up in the spring. In some fifteen varieties of white grapes that I am acquainted with, not one, even the Prentiss or Duchess, would I plant an acre of if the vines were given me. If the Empire State is no better than the Bacchus—and one who ought to know, told me it was not so good—I would sooner plant and eat Bacchus if it is best and cheapest.

Large bunch and berries do not seem desirable in a table grape. Not one bunch in five tons of Delawares, as I grow it, will weigh more than 6 ounces, yet they sell much better than Rogers, twice the size. Delaware grapes and Seckel pears are large enough to sell, and I happen to be interested in a few acres of each. *Erie Co., O.*

[This letter was written early in March. It would be interesting to know at this date whether the peach buds remained killed. We had a very healthy summer and autumn and vegetation had the chance to lay up a good stock of vital force. Consequently, though we had one of the most severe winters known to our venerable friend the oldest inhabitant, vegetation has been comparatively uninjured. Rarely indeed have we got through with only such slight losses. Even the Japan Euonymus has all its leaves green and good.—Ed. G. M.]

EMPIRE STATE GRAPE.

BY MANSFIELD MILTON.

The veteran grape-grower, G. W. Campbell, had on exhibition at the last Ohio State Fair, several bunches of the Empire State Grape, and judging from its appearance it is a splendid grape. The fruit is the best shade of white of any grape I have yet seen. It has but very little yellow, having a thick, white bloom covering the berries.

Mr. C. told me this is without doubt the finest white grape he has seen, and if it does as well in other localities as it has in its home, the sooner it is disseminated the better. It is one of J. H. Ricketts' seedlings, and said to be perfectly hardy, enduring with impunity the winter of 1882-83, one of the earliest in ripening its fruit. It will be a good companion for Hartford and Moore's Early.

THE INSECT PROBLEM.

BY G. ONDERDONK.

On reading the chapter by Mr. T. Bennett in the March number of the MONTHLY, I am led to offer your readers a scrap of my own experience. All Southern cultivators are aware that cotton seed is a very active and efficient manure. But I have never yet fallen in with any published experiences concerning its value in the extermination of the insect pests of the soil. I manured a plot very heavily with it. On every side of the manured spot the cut worm destroyed every plant, while on the manured ground not one worm of any kind was to be found. I attribute the result to the oil of the cotton seed used. We all know that any oil is obnoxious if not fatal to some forms of insect and reptile life.

I have not investigated the extent to which this is true, but I suspect that here is a field for exploration extensive in its range, interesting in its nature, and profitable in final results. I therefore present the fact of my experience in a single case, and throw out a hint which I hope will be taken by enterprising experimenters.

Victoria, Texas, March 25th, 1885.

EDITORIAL NOTES.

COLD WATER TO KILL INSECTS.—Perhaps no more useful hint was ever given than that in one of the early volumes of our magazine, that water warmed to 130° would kill insects. A hint probably of equal value has now been given in the *Rural New Yorker* by Professor Riley, that ice water will kill the cabbage worm. It seems reasonable, and will no doubt have a wide trial on this and other tender-skinned creatures.

THE JAPAN PLUM.—This remarkable fruit, noticed some time ago from fruit received from California through Mr. Kelsey, is attracting a more than usual share of attention from English, German and French growers. The plum, of all fruits, seems to be at home in Northern Europe.

THE NIAGARA WHITE GRAPE.—This comparatively new grape, which we have on several occasions noticed favorably, seems to be well-appreciated by all who have so far tasted it. The coming season will doubtless be regarded as furnishing a full test. The owners have risked a great deal on it in the firm belief that it is one of the best ever offered.

THE COMET PEAR.—Mr. Caywood complains that a pear which grew on a neighbor's farm, and which with that owner's knowledge and tacit consent he named Comet, has been distributed by another firm as the Lawson.

EARLY CANADA PEACH.—Peche precoce du Canada—says the *Revue Horticole*—was introduced last year by M. Boucher of Paris, and besides being ten days earlier than the Amsden, has a wholly free stone. So far the objection to all these early peaches has been that the stones are partially clingy.

A FIRST-CLASS PEA.—According to English authorities a first-class pea should yield 12 peas in one pod. Of course quality will come in as one good point, and an abundance of pods is essential.

AMERICAN BLACKBERRIES IN ENGLAND.—It has at length been discovered by the Old World folks that there is something in American blackberries, and Wilson Junior is being pushed with great spirit there.

SCRAPS AND QUERIES.

JAPAN QUINCE FOR PRESERVES.— Dr. Green writes: "A contributor to your MONTHLY lauds the Japanese quince as a cooking fruit. I had a thorough test made of its cooking qualities many years ago, and found the product tough, and having the taste of varnish. But it is probable that the Japan quince has several varieties of fruit; and it is certain that in point of size the fruit is quite various, if we compare different tastes."

[Undoubtedly there are varieties, as there would be among apples, pears, or other cousins of this Japan quince.—Ed G. M.]

FORESTRY.

COMMUNICATIONS.

OLD AND LARGE TREES.

BY REV. L. J. TEMPLIN.

There is something awe-inspiring in the presence of a tree of great age and colossal dimensions. There is an elevating grandeur in the view of the lofty mountain whose storm-furrowed summit penetrates the very regions of the clouds, and which wears a perpetual crown of glistening snow. But the impresssions in such a presence are those of stupendous power and enduring existence. But when we stand in the shadow of a monarch of the vegetable world, and look up to its spreading branches, and waving leaves, the feeling inspired is not so much of awe and grandeur, as of admiration and reverence. A tree is a living being, and to look upon one that has wrestled with the storms, drank in the dews, and waved its green leaves in the sunlight of centuries, or even thousands of years, awakens feelings akin to sympathy and admiration. And if it be one of these patriarchs that have survived the generations of trees as well as men; one in whose shade the aged people of a score of generations have talked of the past, the vigorous have talked and planned of the future, and the children have played regardless of all but the present enjoyment, an undefinable conviction steals into our hearts that we are standing in the presence of the embodied past. We feel like taking off our hat in reverence to these illustrious examples of vegetable longevity. Such being the case it does not seem strange when we are told that, "The groves were God's first temples;" and that the ancient idolators were wont to build their altars in sacred groves, and that even in more recent times the Druids should have chosen the grand oak forests for the performance of their religious rites.

Some of these ancient oaks under which the priests of this mysterious religion probably worshiped and offered up their bloody sacrifices, are still standing and enjoying a venerable, but green old age. An oak tree that stands in Clipson Park is over 1,500 years old, having been known before the Norman Conquest. The Shire oak, whose shadow falls on three different shires, covers with its foliage 780 square yards. The largest oak in England is at Calthorpe in Yorkshire. It measures at the base 78 feet in circumference. France boasts of some very large oaks; one of which is found near the village of Champrasay, and is 18 feet in circumference. The oak of Allanville is 30 feet in circumference and over 900 years old. But these are mere saplings compared with the oak of Mantravail, which is certainly 1,500, but most likely 2,000 years old. It has a diameter of 30 feet and a circumference of more than 90 feet.

The Chestnut also furnishes some illustrious examples of great size and longevity. One near Lake Geneva is 46 feet in circumference, and is supposed to be a stunted specimen at that, having been struck several times with lightning. Some of the chestnut trees on Mt. Ætna are 36 feet in diameter. But the tree of this species found in that locality is 160 feet in circumference, and has an opening through it at the base large enough to allow two carriages to be driven through it abreast.

The Linden also attains to a great age. One at Neustadt, in Wurtemburg, was an old tree in 1229. Its crown of branches is 400 feet in circumference; is divided into two great branches, one of which was broken off by a storm more than a century ago; the other one is 110 feet in length. A tree of this species standing near Freiburg is 40 feet in circumference, 75 feet high, and was a noted tree as early as 1476. One at Prilly, near Lausanne, was so large 500 years ago that court was held in its shade. The Yew tree is sometimes remarkable for age. One at Foullebec, in France, is estimated at 1200 years, and one in Scotland is more than 3000 years old.

Near Trans, on the upper Rhine, stands a sycamore tree 28 feet in circumference, under which a conference was held to organize a Republic in 1424. The Plane tree of Godfrey of Bouillon, is claimed to be the most gigantic vegetable organism in existence. Its mass of foliage rises more than 180 feet in height, and is 340 feet in circumference. This tree, or rather forest, consists of a double trunk that measures 35 feet round, then a space of 15 feet burned out, then a single trunk 17 feet in circumference, then a group of six trunks united in one measuring 70 feet in circumference.

The Baobab is one of the most remarkable trees that grow. It is not unusual for them to measure 70 to 77 feet around and often reach 100, and they do not get their growth till 800 years of age. The age of some of them has been estimated at 5000 to 6000 years, which would carry them back beyond the time of Noah's flood, according to common chronology. These large trunks are frequently hollow, some having cavities large enough to hold 225 to 250 men.

The Dragon tree is another tree remarkable for size. One on the Island of Teneriffe measured, nearly 100 years ago, 45 feet in circumference. But the same tree was measured in 1402 and was just as large then as it is now. Among the colossal trees of the world the Eucalyptus of Australia stands almost the first. They are often 300 feet high and 25 to 33 feet in diameter. Our own country is not noted for mammoth trees except in one case. I remember when a boy often passing an oak tree that stood nearly a mile south-east of the point where the corners of Henry and Delaware counties in Indiana join the line of Randolph county. This tree was nine feet in diameter. Some years ago I heard it had been made into rails. A gentleman told me that in the early part of this century he saw a family living in the hollow of a sycamore tree in the valley of the Ohio river in southern Indiana. The hollow measured 18 feet across in the center. Our giant redwoods of California are too well known to need describing here. One that was felled some 30 years ago was 450 feet high and 120 feet in circumference; and being the biggest tree in the world it may well close this article. *Canon City, Col.*

EDITORIAL NOTES.

A Live Wooden Fence.—A large land-holder in England has planted an immense fruit farm, 40,000 plum trees being one of the items set out. In order to make a perfect thief-proof fence, he has surrounded the farm with cotton-wood poplars set only a foot and a half apart. By the time the fruit trees are in bearing the trunks of the trees will touch each other. Then he proposes to head them off 18 feet from the ground, and keep the sprouts cut back to this point every two or three years thereafter. In this way he expects to have a living wall 18 feet high, that will at least last as long as the fruit trees in the orchard last.

Forest Commission in California.—This State has established a forest commission and voted them $5,000 for two years. We shall probably learn at the end of that period that the forests of California are rapidly disappearing before fire and the axe, and that "unless something is done California will become a howling wilderness." It will be worth $5,000 to learn this very interesting fact.

Wood of the Butternut Tree.—Quite a demand has sprung up for the Butternut wood for making wooden shoes. These shoes are coming into extensive use in breweries and other industrial establishments where the floors are damp. They are much warmer than the best leather-soled shoes under such circumstances, and have not the oppressive condensation of moisture characteristic of gum.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

NIGELLA DAMASCENA.

BY T. S. G.

Under this title a correspondent in April Gardeners' Monthly says the seeds of Nigella are used in flavoring bread and refers to the "ragged lady" as the common name. The N. sativa was in somewhat common culture in this part of New England fifty or sixty years ago under the name of "garden spice" or "nutmeg flower." The seeds were of a brownish color, abundant, and used for flavoring apple pies and cakes. The flowers are less conspicuous than those of the Damascena, yet it still is more worthy of a place in a collection than many of the new-comers. Don's Gardeners' Dictionary says: "Formerly the seeds of N. sativa were much in use as a carminative stimulant and errhine, but this medicine is becoming deservedly obsolete. They are still used in some parts of Germany and Asia, in cookery, instead of spice, being a pleasant aromatic. They are said to be extensively used in the adulteration of pepper, as well as those of N. arvensis. The leaves are also sometimes used." He calls it the "Cultivated Fennel Flower," and gives the year 1548 as first record of its cultivation.

I well remember this plant as cultivated in the garden of my mother and grandmother, and it always formed a part of the stock of garden seeds which were always home-grown.

West Cornwall, Conn.

PEACH DISEASES.

BY LORIN BLODGET.

I cut away to-day the last of the peach trees I held to be of priceless value, the seedling October Clings, that have borne crops of ample proportions from 1868 to 1883, failing last year completely. This one tree has a cross section of 11 inches, 2 feet from the surface, and its largest branch a diameter of 7 inches, 10 feet from the ground. Its spread was 14 to 18 feet east and south, and about 28 feet in height. There were five of these great fruited October Clings, almost equal in size, and for twelve years bearing three to six bushels each—this one, more on several occasions. All were seedlings of a fine basket of late peaches planted in 1865. This tree never showed the cluster growth of feeble side shoots, nor ever bore a sickly peach. It died slowly, a grim, but useless resistance to this deadly yellows.

I see Prof. Penhallow's paper in the State report for 1883, full, but not quite satisfactory as an explanation, but better as a description of the progress of the peach-killing disease called the yellows. I believe that an ample supply of wood ashes would have done good in the early stages, but muriate of potash does not assimilate until chemically disintegrated. I have tried in vain to get wood ashes, and have not therefore given that method a trial. I kept peach trees in vigor on my farm for fifty years after their planting in 1816, by ample dressing of wood ashes twice a year; but they were not the giant trees that grow in this climate, nor even their crops more than a bushel to a tree. I never expect to see such trees or crops again as mine here gave me from 1869 to 1881. They were in abundant bearing at three years from the seed, and they yielded thirty to fifty bushels at the lowest, yearly, for twenty-five to thirty trees. I was confident that fertilization by ordinary methods would save them, but it did not, and I have cut up their saw-log trunks at intervals for the past year. *Philadelphia, March 25th.*

[A very interesting communication as showing that the peach tree at any age, or under any circumstances, is liable to "Yellows." As Mr. B. remarks, Professor Penhallow's excellent paper is not wholly satisfactory. The "yellows" is believed to arise from a want of potash in the soil, as we understand, because the wood of such trees shows a deficiency in the quantity found in a healthy tree. That Prof. P. is correct in his diagnoses no one who knows the care and patient investigation he gives to any topic he takes up for investigation will for a moment doubt; but those of us who have had a wide experience know that the yellows often appears in soils that abound in potash; either the mineral potash that abounds in feldspathic soils, or that derived from former vegetable organisms. Indeed, the surest road to the yellows is to plant a peach tree near an old wood pile or in a piece of recently cleared forest ground. It seems to us that the deficiency noted by Prof. Pen-

hallow in diseased wood comes from the inability of the tree, from the disease, to make use of potash, rather than from its absence in the soil. The "yellows" in fact is a case of vegetable indigestion.—Ed. G. M.]

EDITORIAL NOTES.

HYBRID POTATOES.—Mr. Thomas Laxton, well-known as a successful hybridist, and the originator of some fine crosses among peas, has undertaken to cross potatoes with other species of the genus Solanum, and has already had some remarkable results. There is evidently a wide field for useful discovery in the hybridizing line.

HERBARIUM OF MR. HOWARD SHRIVER, WYTHEVILLE, VA.—Mr. Shriver has published for free distribution a catalogue of his herbarium, "first, as I desire to sell the herbarium; second, that botanists may have some idea of the Flora." It will be a rare chance for some college, society, or enthusiastic individual to get a good start with such a complete collection.

SOLANUM LEMMONII.—The French have decided that the new tuberous potato which Mr. Lemmon, in our columns last year, believed might be a new species, really deserves that honor, and Mr. Blanchard describes it in the February number of the *Revue Horticole* as Solanum Lemmonii.

ANTHURIUM SPLENDIDUM.—It is said that Alexander wept after he had conquered the whole world, because there were no more nations left to conquer. Those who are marching out to conquer nature, and to become possessed of a knowledge of all her secret ways, are not likely to imitate Alexander very soon, for, look where we may, we see problems in vegetable life that none have ever yet conquered. Plants of the Arum family, to which this beautiful plant belongs, are among this mperturbable set. Some have white spots or other peculiar markings on the leaves, but no one knows why. We have some sort of an impression that it is for the good of the individual, the good of its race, or for the general good of the whole creation: but in what particular respect one with a peculiar marking is of more good to itself or another, than one with some other marking, nobody knows as yet. Here is a plant with leaves, as if covered with blisters. We know that poor humanity is often under the necessity of being blistered from head to foot; but what a plant wants with blisters is a profound mystery.

To our mind it often seems that we are on the wrong track when we try to look for an element of selfishness in every act of life. We sometimes think that plants were made pretty, not for mere attractiveness to insects and other similar selfish ends, but solely to be attractive to those capable of enjoying loveliness. As the poet says, beauty is its own excuse for being; and if this be so we have a very good reason for the blistery surface here. It gives a remarkable and unique character to a leaf that might otherwise be unattractive. Mr. Bull, its introducer, must be excused for the enthusiasm he displays in telling us about it. He says: "It is a strikingly beautiful stove Aroid, imported from South America. It is quite distinct from anything yet in cultivation, and a plant which cannot fail to become universally admired, the surface of the leaves being remarkably peculiar. It has a short, thick caudex, from which spring up the cordate leaves, which have an open sinus, the lobes meeting behind. The course of the nerves is marked by a broadish band of deep lustrous velvety green, the intervening spaces of about equal width being in striking contrast of a pale yellowish green. The leaf surface is scabrous, and the portions between the ribs strongly bullate as if raised in papillose blisters. The veins on the under surface are angular, with tooth-like projections at intervals, while the whole under surface is punctate with small pallid dots. This will be the great acquisition of the season." (See cut.)

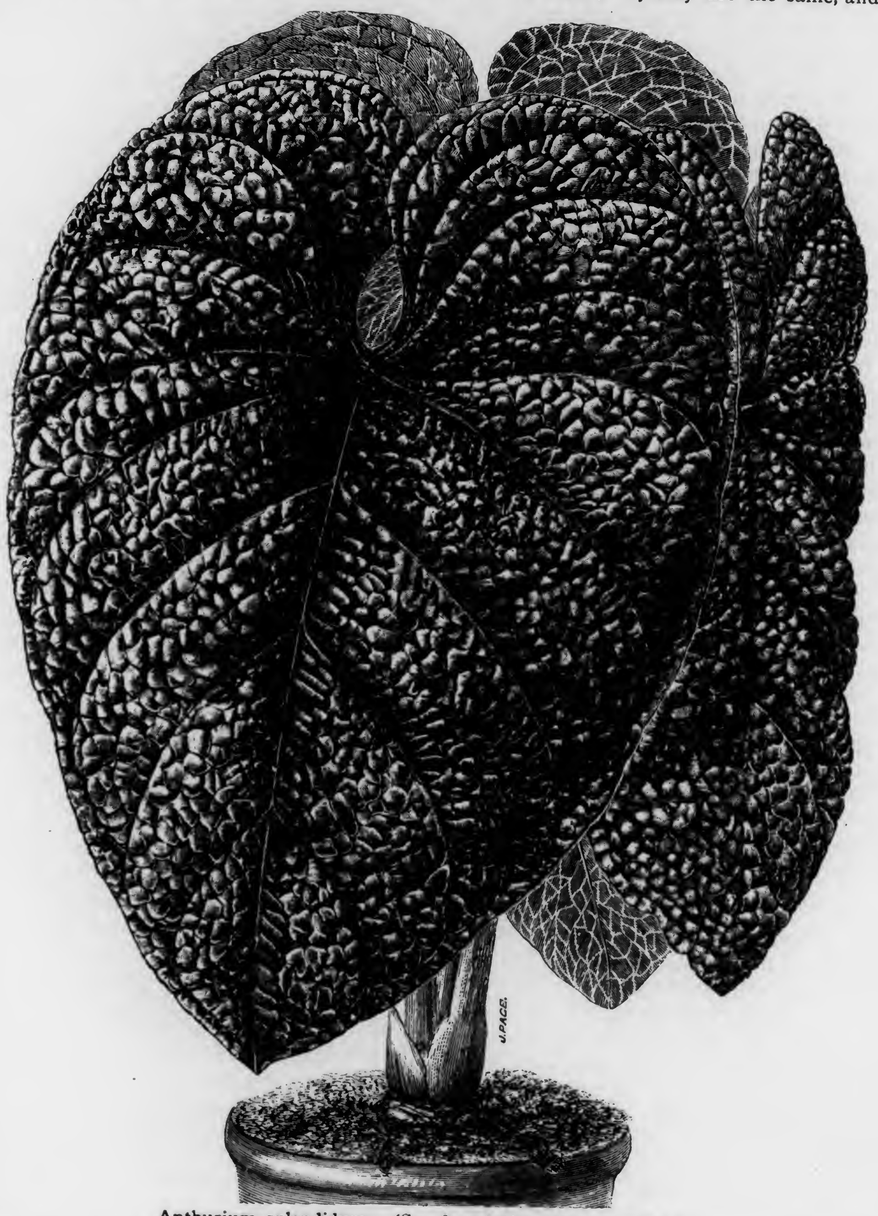
SCRAPS AND QUERIES.

THE JALAP ROOT.—Mr. Lester sends us a black root of the shape and form of a pear;—the Exogonium purga, well known in pharmacy for its purgative character.

INDIVIDUALITY IN PLANTS.—"A. B.," Leesburg, Florida, says: "While you are discussing fertilization in your magazine, could you enlighten me on the following point? Mr. Darwin, I think, wrote in one of his books that from a fertilizing point of view a cutting or graft from a plant was the same individual as the parent. Now what I want to know is whether the same individuality remains by propagation ad infinitum and whether on that account one would get better crops by planting different varieties in alternate rows?"

[Mr. Darwin does say in regard to cross-fertilization of flowers, that when bees go from flower to flower on the same plant, that is not to be regarded as cross-fertilization; and further he says that plants propagated from cuttings, grafts, suckers, or in any way but by seeds, are individuals of the same origin, and pollen from one plant to another under these circumstances is not cross-fertilization.

Now in a general sense, this proposition of Mr. Darwin seems correct. If two plants are in every respect the same, why they are the same, and no cross-fertilizing can add anything more than exists. But we know now, much better indeed than Mr. Darwin did, that new varieties can come into ex-



Anthurium splendidum. (See description opposite page.)

istence otherwise than by seed. This is called bud-variation. If, therefore, a branch produces a new variety, that is, characters that did not exist before, there is no more reason why pollen from this new variety and the original should not be regarded as cross-fertilization, although the plant was raised from a cutting, than if raised from seed.

If there is any immediate effect from cross-fertilization, there should be, as our correspondent suggests, a better crop when the flowers have pollen from an abundant bearer.—Ed. G. M.]

IMMEDIATE EFFECT OF POLLEN.—A Leesburg, Fla., correspondent says: "I see in the GARDENERS' MONTHLY it is considered impossible that an immediate cross can have any effect on the shape of a fruit; but don't you think that it can on flavor, because Hautbois strawberries will affect a whole bed, and Muscat grapes will give their flavor to a house?"

[Is it a well authenticated fact, one plant of a Muscat grape in a vinery will give a Muscat flavor to Black Hamburgs and other grapes in the same house? The writer of this has had just such houses, and never noticed any such influence; and so have hundreds of others; on the other hand, this is the first time we have ever heard such an influence even suspected.

In regard to the strawberry it has been the impression that the Hautbois strawberry (Fragaria collina) has never been made to cross at all with the Scarlet strawberry (Fragaria Virginiana), much less influence each other's fruits by the cross. If our correspondent can refer to any experiments that have been made and placed on record, we should be very glad to republish for our readers' benefit.—Ed. G. M.]

PINUS BANKSIANA NOT IN COLORADO.—A correspondent says: "You have made a mistake on page 114 in naming P. Banksiana as one of the trees in the mountains above Denver. P. contorta, or rather P. Murrayana looks very much like P. Banksiana which does not grow in Colorado. P. Murrayana grows up in Montana in countless thousands on burned land, but it does not grow in the Black Hills in Dakota, neither does P. Banksiana, which runs out in Minnesota 200 miles above St. Paul."

[Writing Pinus Banksiana, was wholly a slip of the editorial pen, as of course P. contorta was intended. It is a good illustration of how long a first impression will endure. When the editor first visited Colorado years ago, his first impression of the young pine trees was, that he saw P. Banksiana. Though he learned better after finding trees with cones, yet we see here that first impression slipping unconsciously from the pen after lying dormant fifteen years.—Ed. G. M.]

GEOGRAPHY OF CACTACEOUS PLANTS.—Dr. C. W. Greene notes: "A writer in your excellent GARDENERS' MONTHLY for April, says that all cactuses are American. Le Maout and Decaisne, (Mrs. Hooker's translation,) say that one species of Rhipsalis is both Ceylonese and West African. Not long ago some writer (I think in the *American Naturalist*) stated that there were two probable non-American species, one strictly Ceylonese and one probably West African. I can not now lay my hand on this article."

IMMEDIATE INFLUENCE OF POLLEN ON FRUIT.—A correspondent says: "In the March number of the MONTHLY you seem to regard it as an impossibility that, in any case of hybridization, the strange pollen should produce a modification of the ovary. That it does not, at least to a perceptible degree, in a majority of cases, must be true, else it could not have escaped the notice of watchful eyes. But it is hardly safe to lay down a uniform rule, and say that it never does, and never can. All pollens do not act alike. No doubt, the ovaries of myriads of plants have their stigmas visited by the pollen-cells of other species, flowering at the same time, and those often nearly allied, as for instance in the genus Quercus, and yet their ovules are not affected. Here and there they are, and hybrids result. Why may not the modifying influence extend further, though more rarely, to the ovary itself? The puncture of the ovipositors of most insects leaves only a scar on the stalk or leaf, but in some cases, the vegetable forces are so diverted that growths of singular shapes are produced for the accommodation of the ova, each of its own kind. After all, theory must give way to fact, and one good example is enough. Whilst living in Lancaster, Pa., I planted seeds of the nutmeg variety of the canteloupe, in hills, in a bed at the end of my garden, and, on one side of this bed a few hills of cucumbers. As the canteloupes developed, those lying next the cucumbers assumed a decidedly oblong shape, and were smooth on the surface; of a deep green color, and when cut, watery and possessed of a cucumber-like odor and taste. Those on the other border, removed from the cucumbers, were of the normal shape, round, grooved, rough, of a grayish hue, and ripened into fruit possessed of all the qualities of that delicious variety of the canteloupe. Was I wrong in attributing the ruin of half my bed of melons to the agency of cucumber pollen? As you have means to do it, test my statement by experimenting the same way next summer, and report the result."

[It was far from the Editor's intention to suggest the impossibility of this immediate influence, but to show that evidence readily within the reach of any person, namely, direct experiment, has never proved the point. Direct evidence has been attempted, and recorded years ago in the transactions of the Royal Horticultural Society, but that evidence went the other way! Now what a good chance was lost by our correspondent. With such excellent grounds for suspicion, if he had planted a melon wholly by itself the next year, cut off the male blossoms before opening, and given it nothing but cucumber pollen, he could have now told us all about it.—Ed. G. M.]

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

THE DERIVATION OF PERSIMMON.

BY JOSIAH W. LEEDS.

In the current number of GARDENERS' MONTHLY I note that the Editor after giving a statement from Captain Smith's narrative to show that the original spelling of the word "persimmon" was "Putchamin," inquires as to the signification of the Indian term. I do not have any vocabulary of the tribes of the Powhatan, but in Heckewelder's "Words, Phrases, etc., of the Lenni Lenape, or Delaware Indians," who, like the Powhatans, were a section of the great Algonkin group, I find a word given which is quite like "putchamin," namely, "Kpaskhamen"—to plug up tight. Likewise, the related word "Kpahammen" is stated as meaning to shut up anything close. Now as this is exactly what happens to one's mouth when it undertakes to deal with an unripe or lack-frosted putchamin, the above is offered as a possibly correct solution by thy friend.

Philadelphia, Fourth mo. 3d, 1885.

MECHANICS INTERFERENCE WITH GARDENERS.

BY THOMAS LAWRANCE.

Not the least of the ills gardeners are heir to is the meddling of mechanics with the direction of work that properly belongs to the gardener. A few years ago one of my customers wishing to take down his greenhouse and rebuild, requested the architect and builder to confer with me, and carry out whatever I recommended. We did so confer, but our ideas were entirely at variance. His idea was an architectural one and that horticulture must conform to it and that it was "all nonsense," "out of proportion," "not in keeping," etc. The proprietor not knowing what to do was almost persuaded. I did not try to convince them to the contrary, and left. A few days after I was sent for; he had enclosed money in a letter to a florist friend in Rochester desiring him to hire a hack and visit all the private houses in R. and see if there was not a successful one in accordance with his ideas, which he enclosed, mine also. He honorably told me what he had done, and the reply received, which was, "We say, by all means build as your florist suggests; his ideas are correct." He remarked, "We have concluded it must be built as you say; I see you all run in the same rut," etc. The house was built to the entire satisfaction and pride of the owner, architect and myself.

The boiler and pipes were duly put in as I directed. The inside elaborately finished. The owner asked me if I did not think the pipes should be painted. I said "no; let them alone." He said they looked rough and he should think just a little lamp-black and oil wouldn't hurt them. I again said, better let them alone. On my next visit two days after, I met the owner at the door of the house and said, "I see you have painted the pipes." "O, yes, just a little lamp-black and oil (and I am sure he thought that was all). Mc—— (the plumber) said he'd risk there being any danger." I thought no more of the matter till two months later I was remodelling the grounds; the gardener called my attention to the unusual quantity of leaves falling off and the rancid tarry smell,

which I thought indicated that the trouble was in the boiler or pipes. The water was drawn off repeatedly, but still the trouble continued, if anything, growing worse, for the nights were growing colder and stronger fires were kept. I suspected the black stuff on the pipes and asked the gardener if he knew for certain what it was. He said they told him, lamp-black and oil. I sought the boss painter and journeyman painter and the plumber, but got the same answer from all, simply lamp-black and oil. Feeling convinced they were trying to deceive and shift the blame on my shoulders, I finally examined the out-buildings, when there I found the veritable tar pot that had been used. The owner's wife was away from home and he spared no expense to give her an agreeable surprise on her return. I imagine her surprise and tears when she looked in and saw her once valuable plants utterly leafless, a grimy workman swabbing off the vile stuff, bespattering the handsome tiled floor, and all from the impertinent interference of mechanics.

I could give dozens of instances such as these entailing the loss of hundreds of dollars and years of time that cannot be recalled, but fear this is already too long. *Ogdensburg, N. Y.*

[Our correspondent is too modest in his figures. If he had said hundreds of thousands of dollars, instead of hundreds, he would have been nearer the mark.—Ed. G. M.]

THE NAME PERSIMMON.

BY W. R. GERARD.

This word has been variously spelled. Botanists of the early part of this century (Muhlenberg, Barton, Eaton) spell it with one *m*. The following are, in chronological order, some of the orthographies: Persimon (Kalm, 1748); Persimon, Putchimon, Pitchumon (Clayton, 1743); Parsimon (Tailfer, 1741); Phishimon (Catesby, 1712,-'26); Persimmon (Lawson, 1709; Beverly, 1705); Possimon (in a list of Long Island plants, 1670); Persimmon (Shrigley, 1669); Persimena (in a description of New Albion, 1648).

These various forms are derived from Virginia-Indian (Algonkin) Pessemmin (as spelled by Strachey about 1610). The syllable *-min* is an inseparable Algonkin suffix, meaning "fruit" or "grain," as in Homine (Hominy) "the grain par excellence," Odeimin, "heart-berry" (Strawberry), Mishimin, "big fruit" (apple), Assimin (whence Assimina), etc., etc. The signification of the first syllable (varied to *pars-*, *pos*, etc.) is not so clear in meaning, but it may perhaps be a variant of the Algonkin root *pas-*, "dry," giving us the meaning of a "fruit [to be] dried." Capt. Smith, in fact, tells us that the Virginia Indians prepared persimmons after the manner of prunes, by drying them upon mats and hurdles. Cf. Cree (Algonkin) Pasiminan, "dried fruit." *New York.*

A KNOWLEDGE OF HORTICULTURE.

BY N. ROBERTSON.

The fast strides that horticulture has been making in cultural points, new introductions, and many other things, render it impossible for any gardener to keep pace with the times without access to horticultural works. There was a time when gardeners had some excuse for not subscribing for such works, for there were only a few standard ones published, at a very high price, and their salaries were so small that it could not be afforded; but that time has now passed, and he must be in very poor circumstances indeed who cannot afford eighteen cents per month for one of them. The magazines now published would give him more practical information than the old works did, because they are made up largely of the experiences of our best practical men; their pages are always open to the inquirer, and ready to help forward the profession in every way they can. It is a strange period in a gardener's life when he arrives at a stage where horticultural works become of no value to him. From the lack of such works he has no ambition to rise, and is left stuck fast to old habits, from which he has no power to extricate himself, missing the most interesting portion of a gardener's life. There is no calling into which a man can embark that can give more expansion to the mind than horticulture, but unless he reads and studies it soon becomes to him a mere routine, losing its attractions, and his work becomes a drudgery to him. His work may pass where he is isolated from public view, but when he comes forth amongst modern men he must almost stand amazed when he sees how far he has drifted behind them. If a man has any ambition to rise in this profession, and be lifted up from obscurity, he has to put forth every exertion to secure all the knowledge in his power, not only by making himself conversant with what is passing in horticultural works, but by working and observing as he goes and throwing himself with all his might into his work. Some of the horticultural periodicals are expensive because of their high class illustrations, which must always entail much expense to produce them. Such works are very useful when one finds himself able to reach them, for new plants are generally the subjects chosen for the illustrations. I take such plates out and paste them into scrap albums, alphabetically arranged, so that I can refer to them easily. Works produced on this continent I prefer, as they contain instructions better adapted to the climate than others do. If we were to follow the instructions given in foreign publications, in many cases our failure would be complete. Some contend that the difference in inside work does not exist; perhaps not to the same extent, but for all the practice is very different. Gardeners should, for their own and their employers' benefit, see the work of other men, visit places of note, see the different methods others pursue, as it often leads to ideas never thought of, and that reading might fail to produce. *Gov't Grounds, Ottawa, Can.*

RUSH-LIGHT CANDLES.

BY G.

Your recent notice of Bayberry candles recalls to mind a much more ancient and equally interesting means of domestic illumination, the rush-light. On account of the literary interest attaching to the rush-light, a lady of my acquaintance had a few rushes stripped of their bark, leaving only the pith and a narrow thread of the cortical substance, which served to give strength to what was left of the rush. The latter was then dipped a few times in tallow. When lighted in a dark room such a taper will afford a rather feeble glimmer. The truth is, however, that rush-pith is not a very good wick, for it has but a slight degree of capillarity.

Some years ago there was a proposal made by somebody to establish, or have the U. S. government establish, a National Botanical Garden, somewhere in Southern Florida. The idea always has seemed to me an admirable one.

EDITORIAL NOTES.

COL. N. J. COLMAN.—There is no reason why a President should not appoint a friend or the friend of a friend to a distinguished office, if the appointee have superior fitness and qualifications for the position. But this is not by any means the universal thought in making appointments. The nomination of Col. Colman as Commissioner of Agriculture is therefore the more remarkable. No man knows more than he about the agricultural needs of the nation; no one has a more practical or intelligent acquaintance with the subject than he, and to this as a legislator and Lieutenant-Governor of Missouri he has had that training in public affairs without which experience has fully shown that highest intelligence goes for nothing. It is so rare that the right man and the right place happen to come so fitly together, that it is well worthy of special congratulation.

MR. JAMES MORTON.—Our readers will remember interesting papers occasionally contributed by Mr. James Morton, formerly gardener to Hon. L. W. Coe, Torrington, Conn. We note by a Clarksville, Tennessee, paper that he has now taken charge of a commercial garden and florist's establishment known as Evergreen Lodge, owned by Captain Crussman, near that town. He has our best wishes for his success in his new vocation.

PARKER EARLE.—This energetic and well known fruit grower of Southern Illinois was born at Mount Holly, Vermont, and settled in Cobden in 1861. This is now among the best known fruit growing centers in the West, and mainly through the efforts of Mr. Earle. He has the largest pear orchard probably in the West. As Superintendent of the Horticultural Department of the New Orleans Exposition he has won golden opinions everywhere.

DR. REGEL.—Dr. Regel the well-known director of the celebrated Botanic Gardens of St. Petersburg is in his 72nd year, and still vigorous and full of work.

THE HOME FLORIST.—This work, noticed favorably in our magazine on its first appearance, has been so well received that a second edition has been called for. It has been revised by the author, Elias A. Long, and this time is published by C. A. Reeser, of Springfield, Ohio.

VINE CULTURE IN CALIFORNIA.—By Charles Joly. Among the many able essays continually offered to the French Society of Horticulture this one is prominent. He tells the French people of the wonderful progress of grape culture in our country, but comforts them by saying that it will be a long time yet before there will be an end to vine culture in the Old World, notwithstanding America's wonderful progress; but it is interesting to French horticulturists as well as the rest of the world to study the marvelous progress of the two races of English speaking people, the one in Australia, the other in America, free from all slavery, marching on to the conquest of the soil;

rivalling, in their activity to develop the riches of labor, the older nations of Europe that depend chiefly on human blood and military glory to finally resolve the great problems of society.

THE HORTICULTURAL DIRECTORY OF THE UNITED STATES.—By Charles F. Evans; published by Isaac D. Sailer, Philadelphia.

This is the most complete work of this kind ever issued in the United States, containing not only nurserymen, but florists and seedsmen. It must have entailed much labor on the enterprising editor, but the necessity for such a work will no doubt bring a good response.

MANUAL OF AGRICULTURE FOR THE SCHOOL, THE FARM, AND THE FIRESIDE.—By George B. Emerson, and Charles L. Flint. A new edition by Dr. Charles A. Goessman. New York; Orange Judd Company.

A large number of works of this character remain out of print with the first issue. That the work of the able authors of this book should call for a second edition is proof of its value.

INDEX MEDICUS.—This work, of great interest to the medical profession, which was unfinished by the death of its publisher, will be undertaken to completion, by the well-known enterprising publisher, George S. Davis, of Detroit, Michigan.

THE SUMMIT CO. (OHIO) HORTICULTURAL SOCIETY REPORTS FOR THE LAST SIXTEEN MONTHS.—This gives a full account of the excellent work done by this society in fostering a love for garden pleasures in that community.

REPORT OF THE U. S. DEPARTMENT OF AGRICULTURE FOR 1884.—The Commissioner reports that during the past year over 100,000 economic plants have been propagated and disseminated for experiments. The department introduced the Japan Persimmon 15 years ago, and mainly through its instrumentality it is becoming one of America's standard fruits. Experiments with tea plants are still going on, and the department has strong hopes of final success. The greatest call on the department for plants for experimenting comes from the more tropical States. The Botanical Department has done good work in making known the value of our agricultural grasses, and herbarium specimens of duplicates are distributed generously to agricultural colleges and elsewhere.

The Entomological Department has been particularly active and useful. The work of Professor Riley as recorded here, gives a bright character to the report.

In the Forestry Department the Commissioner believes a report, soon to be specially issued, will be a valuable work to tree planters. He is now satisfied that nothing can be done by the government to check the fall of the forests before the fire and the axe, and that our best attention should be given to planting new forests. Nebraska has set out 4,500,000 trees the past year.

CHAUTAUQUA LITERARY SOCIETY.—This body is doing great good by the organizing of branches of intellectual culture. The famous Agassiz association of young people for the study of natural history, now numbers 7,000 members. It is now about to organize a similar one for the study of agriculture. Miss K. F. Kimball, Plainfield, N. J., has this department in hand.

THE CANADIAN HORTICULTURIST.—This interesting monthly gives a colored plate of fruits or flowers wi'h every issue. The February number has some new dahlias, a flower which not only holds its own in popular estimation but seems to advance from year to year. The *Horticulturist* is edited by Dr. Beadle, of St. Catharine's, Ontario.

THE AMERICAN SEEDSMAN.—Published by Isaac F. Tillinghast, La Plume, Pa.

This is a monthly magazine devoted wholly to the interests of the American seed trade. Among the topics discussed in the number before us is the liability of seedsmen who may sell a 25-cent paper of cabbage seed, for several hundred dollars in damages, should the climate or treatment of a cabbage plant cause it to run to seed instead of forming a head, or meet with some other accident wholly out of the control of the man who sells the seed. Those for whom the magazine is intended will no doubt find much of profit to them in this magazine.

WOODS AND FORESTS.—This independent forestry magazine did not meet with sufficient support and has been merged with the *Garden*. Mr. Robinson found what has been long known in America, that those who in many cases talk the most about forests, do nothing to make forestry a success.

SCRAPS AND QUERIES.

KIND WORDS FROM A SUBSCRIBER.—No one but those who have had the actual experience knows of the crosses, trials and tribulations that beset the Editor of a magazine like this. The Editor of the GARDENERS' MONTHLY has had twenty-seven years of this experience, and so can

tell as well as anybody. And yet these evils have their compensations. Here is a kind word from one whom the Editor has never seen—a kind word that compensates for many hundreds of the little disagreeables inseparable from the editorial life:

"Allow me the present opportunity of acknowledging my obligations to you, as Editor of the GARDENERS' MONTHLY. For many years it has been one of the greatest comforts and enjoyments of my life; selfishness may prompt the wish, but I hope that you and it may survive me."

SERICOGRAPHIS GHIESBRECHTIANA.—"Ignoramus" has been "moved to inquire which form of expression is the correct one. The title reads Ghiesbrechtiana Sericographis, but Sericographis Ghiesbrechtiana in the body of the article in last number."

["Ignoramus" has not quoted correctly, but it is near enough that we may explain that there is objection in some quarters to Latin or Greek names because they are so hard, and some good authorities in the Old World are inventing easy ones. Sericographis Ghiesbrechtiana is considered a very hard word, so, in order that it may be rendered simple, they have given us Ghiesbrecht's Sericographis as an easy substitute. Individuals among human beings have also in many cases very hard names. The movement for reform will perhaps extend to these as well as the names of plants, and the advocates of the measure may hope to secure an universal law that hereafter no fellow shall be borne down by a name of more than one syllable, unless he be of royal extraction, when not over six shall be tolerated.]

PLURAL NAMES.—"Inquirer" says: "As I note your magazine endeavors to aid intelligence in every branch that horticulturists are expected to know something about, I would ask whether the plurals you often use for plants are strictly correct? I notice you say cactuses, clematises, funguses and so forth. These are Latin names, and I think should be cacti, clematidæ, fungi, as your contemporaries always employ them."

[No objection to have these queries. There is no reason why the lover of horticulture should not have as much general intelligence as the rest of mankind. In the cases referred to, we were not talking Latin, but English. We have taken these words into the English language — naturalized them—then they must follow English rules for making plurals as well as in other things. When writing Latin we shall use cacti, and not cactuses. —Ed. G. M.]

WANTS TO KNOW.—A New York correspondent says: "When we don't know we have to go to headquarters to find out. A list of plants sent to me by a customer to supply puzzles me. I have managed by inquiry to get the most of them, but I would like to know what the following are: Sheep's Horns, Daddy Johnson, Coral Ring, Inch Cactus, Dog's Snout, Irishman's Breeches, Aaron's Beard, and Cut-me-Quick."

[We are afraid our correspondent has not yet got to headquarters to find what he wants to know.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

HORTICULTURE AT THE NEW ORLEANS EXPOSITION.

BY E. BAKER.

That the New Orleans Exposition is now a very great success cannot for a moment be denied. Complete in every department—save one—it offers a vast field for study in all branches of the arts, sciences and manufactures. It is the freely-expressed opinion of those who have visited the great expositions of Europe and this country, that in magnitude, variety, and tasteful arrangements of the articles exhibited, this exhibition is superior to all. A month can be pleasantly and profitably spent in contemplation of the great and varied resources of this and other countries here grouped with system and order; forming a vast panorama worthy of the attention of every American who would know his country, and its capabilities. Indeed, to miss seeing this wonderful collection is to lose an opportunity that will not probably occur again within the lifetime of the present generation.

But there is one department, one portion of this grand display, that falls short of all others, and far below the expectations of the thousands of visitors that now daily throng the buildings and grounds. This being the Horticultural department particu-

larly interests us here. The management have provided a magnificent conservatory, six hundred feet long by about one hundred and ninety-four feet wide, excellently adapted to display and preserve a great collection of plants of every variety. Now what do we find? A large and excellent collection from Mexico, Guatemala, and some portions of Central America, consisting mainly of Cacti and Orchids, and a pretty and interesting lot of Palms from Jamaica. This, together with a very fair display of greenhouse plants by the few nurserymen of New Orleans, will be found to comprise the bulk of the exhibit. The immense glass house looks empty; the beautiful and varied collections we have been led to expect, and naturally do expect to see in connection with this great fair, are missing. Who is responsible? Why are the hundreds of nurseries all over the country not represented here? In no other industry is there such a conspicuous lack of enterprise. All, save the growers of plants, are well represented. Many medals and money premiums have been offered but have evidently been no inducement. If for no other reason, one would suppose that a proper business spirit with a view to the extension of their trade, would have induced a number of establishments to have exhibited such specimens as they have facilities for growing in a superior manner or in large numbers.

But without further comment let us say, that it is not too late to remedy this error; the extreme cold of winter is now over and plants may be forwarded with safety; the conservatory is in the hands of practical gardeners who will keep plants in as good condition as in their owner's hands; and the exposition will be open and visited by from twenty to fifty thousand people daily for the next month. Let the nurserymen without further hesitation make up and forward such specimens as they deem worthy of showing. A collection of from ten to a hundred plants from each establishment would soon fill this beautiful greenhouse and make it an attraction second to none within the great scope of this enterprise. In almost all cases growers make specialties of certain plants and can with very small expense or labor exhibit a portion of their stock. Then we should have groups of Camellias, Azaleas, Marantas, Begonias, Ferns, Palms, Dracænas and attractive plants of various other varieties, which being brought together under one roof would, in addition to the beauty of the display, facilitate comparison and prove of great benefit to the buyer and grower. Let this matter be taken in hand at once. *No. 14 Camp st., N. O.*

MASSACHUSETTS HORTICULTURAL SOCIETY.

BY B.

The Spring Exhibition of the Massachusetts Horticultural Society, which opened March 19th and continued until Friday the 20th, was without question the best ever held in Boston; and in fact in no other part of the country has such a varied and rare lot of spring flowers been gathered together in one hall for exhibition. Outside, the temperature was continuously below freezing, and had it not been for this fact, the hall would have failed to hold all the exhibits which were promised. About ten thousand persons visited the show, and the crowd was so great that on several occasions admission was denied to those in waiting, until the hall could be cleared. At the entrance of the hall was a stand of forced Roses and Azaleas from Mrs. Francis B. Hayes, the central specimen being Rhododendron Veitchianum lævigatum with great fragrant flowers of the purest white.. Among the Roses was a fine plant of Paul Neron with flowers of extraordinary size. Next to this stand was a low platform 55 feet long and 6 feet wide with an elevated center devoted mainly to spring flowering bulbs, the display of which was far superior to any ever made before, and next to the Orchids constituted the glory of the show. Hyacinths, Tulips, Narcissi, Jonquils, Crocuses, Anemone Coronaria, Lilies of the Valley, were shown in the finest specimens of the newest varieties, and in bewildering profusion like the most brilliant bed in the flower garden filled with the choicest selection of plants. Besides the bulbs there were graceful and delicate Heaths, fragrant Violets in pots, Primulas and Pansies growing on the plants, far more attractive than the cut flowers in flat dishes.

The most notable Narcissus was the new "Sir Watkin" a gigantic form of incomparabilis. This and Poeticus ornatus attracted much attention, together with the Tenby Daffodil or N. obvallaris. The latter is a compact and beautiful Narcissus. All were shown by Edward L. Beard, who also had a lot of Cyclamen, the finest type ever shown, of compact habit, brilliant colors, and bearing immense flowers. On this center platform were grouped not less than a thousand pots of every conceivable form of spring flowers, forming a sight long to be remembered when once seen. At the end of the hall, grouped upon the platform with a backing of tall palms, ferns, &c., were the Orchid collections embracing about 100 plants, many of them unique specimens. F. L. Ames, of No. Easton, exhibited Dendrobium Ainsworthii with over 150 flowers, Phalænopsis Brymerianum P. Stuartiana, Cattleya Amethystoglossa, Dendrobium Brymerianum; several magnificent plants of Odontoglossum Alexandræ and Pescatorei. One of the latter bearing sixty flowers on one spike. Dendrobium Wardianum album, besides several huge plants of the type, Odontoglossum triumphans, with an unequalled spike of bloom, and many others of rare quality and large size. H. H. Hunnewell exhibited a plant of Coelogyne cristata, Chatsworth var., 3 feet across and a sheet of flowers. Phalænopsis Schilleriana, several extra good varieties of this being shown, one plant with about 75 flowers open. Cymbidium Lowi, Odontoglossum Insleayi, Calanthe Turneri; a fine plant of Dendrobium Wardianum, Sophronites grandiflora, besides numbers of others. David Allan, gardener to R. M. Pratt, exhibited about a dozen grand plants of Dendrobium Wardianum, most of them bearing from forty to sixty flowers. He also displayed a plant of Dendrobium Ainsworthii, well bloomed, and one of the finest plants of Cypripedium insigne ever put on exhibition. It was about 4 feet across. All of the Orchids were interspersed with Ferns, brilliant Anthuriums constituting a display rarely witnessed. A gratifying feature of the exhibition was the award of the Society's silver medal to F. L. Harris, gardener to H. H. Hunnewell, David Allan, and W. A. Robinson, gardener to F. L. Ames, for skilful culture of Orchids. The Botanic garden at Cambridge, through W. A. Manda, its gardener, exhibited forced herbaceous plants including Lilium tenuifolium, Primula Cortusoides, Trillium grandiflorum and Doronicum Caucasicum, the latter very bright, and showy. Jackson Dawson of the Arnold Arboretum showed fine and well-bloomed plants of Hybrid Perpetual Roses on the Japanese stock and an interesting collection of hardy Primulas and Polyanthus in pots, besides forced Kalmia latifolia. John B. Moore took the first prize for 24 cut blooms of Hybrid Perpetual Roses, which were even finer than his magnificent June flowers, which for three years have taken the challenge vase. A magnificent bloom of White Baroness took the first prize for single bloom. This promises to be a finer rose than the Merveille de Lyon.

The Pansies in pots and also cut blooms from Denys Zirngeibel attracted much attention, the strain being one of the best in the country. Cut Carnations were handsomely shown, J. A. Foster having a fine lot including seedlings shown naturally with their foliage. Tea Roses and Hybrid perpetual Roses were staged in great profusion, Delay & Meade taking a number of prizes for tender varieties. The major portion of the prizes for for Hyacinths were taken by C. M. Hovey, C. H. Hovey & Co., and John L. Gardner. The latter represented by that veteran, C. M. Atkinson, took first prize for 12 with the following—La Tour d' Avergne, Laurens Koster, Princess Dagmar, Obelisque, Sir John Lawrence, Snowball, Charles Dickens, Alba Maxima, Argus, L' incomparable, La Grandosse, Czar Peter. The first prize for six Hyacinths was first awarded to E. L. Beard who was subsequently disqualified on account of duplicates, and then awarded to C. M. Hovey. The best single spike was Czar Peter shown by C. H. Hovey & Co. The first prize for the best display of hardy Narcissi was given to E. L. Beard, and the three prizes for best general display of spring bulbs went respectively to C. M. Hovey, C. H. Hovey & Co., and E. L. Beard. Last but not least were the Azaleas where the veteran Marshall P. Wilder and Arthur W. Blake, a new contributor, divided the honors, Mr. Wilder filling a platform with fine large old specimens, and Mr. Blake contributing a collection of young plants of the newest varieties, among which La Flambeau was of most intense color. Had it not been for the intense cold the display in this class would have been grand. Mr. Moore exhibited a plant of the new hybrid perpetual Rose—Col. Felix Breton. This is the darkest Rose ever shown of good habit, promising well for freedom of bloom and very fragrant. It was awarded a certificate of merit. These exhibitions have grown so, both as to the number of visitors and exhibitors, that the society finds its facilities severely taxed. An indication of this may be noted from the fact that more people visited the spring exhibition this year, than during the entire five years previous to 1883, with exception of the year when the Pomological Society held its session here.

FLORAL NOTES FROM THE NEW ORLEANS EXHIBITION.

BY M. H. LESTER.

In the Horticultural Department at the Exhibition, I notice Cattleya citrina in bloom. It is not near as much grown as it deserves to be. Its golden yellow flowers are very graceful and beautiful. Also Lycaste aurantiaca with several Oncidiums, Epidendrums, and Odontoglossums.

A good deal of attention seems to be attracted to a plant in the Jamaica Exhibit, Cyphomandra betacea, or tree Tomato. From the appearance of the plant I do not think it will ever be available for any part of this State. It may be useful in

Florida, and some parts of California. I expect it is a variety of Solanum. Some of the fruit are also on exhibition, and I take the liberty to send you a few as you may not have seen them.

Outside the south entrance to Horticultural Hall I notice two large circular beds of roses, donated —I think—by the Dingee & Conard Co. They are looking just splendid now, but some one ought to be detailed to clean them. They will be smothered with weeds in no time.

The Universal Bulb Co. make a good display in the grounds, but as none of their exhibits are labeled it is one in a thousand that know what they are. Passing a bed of Anemones I heard some ladies remark, "O see the double poppies."

When I get in amongst the Cactus Agave, Dasylirion, &c., I can't get away! I get more and more interested in them every time. Huge Cereus speciosismus, C. Engelmannii, C. dasyacanthus Fourcroya glauca, and two splendid specimens of Agave Shawii, all in bloom. Opuntia Coccinillifera with the cochineal insects on and at work; and thousands of others, both large and small.

Gabriel Marc, of Queens, Long Island, has a fine collection of Azaleas on exhibition.

Mr. John Saul sent a fine collection of Begonias, specimen Ferns, &c., in fact, a fine miscellaneous collection, early in the season, which, unfortunately were caught with frost in transit.

Immediately after the first prize "for Oranges grown in the United States" was awarded to the California collection, a large basket of the fruit was taken from Horticultural Hall to the California "State" exhibit, in the Government building, and placed convenient to a pile of circulars, on which was a card inscribed "please take one." Some one passing changed the card from the circulars to the Oranges, and the gentleman in charge of the exhibit is ready to swear those Oranges flew out of that basket, while he had his back turned for a minute. He does not see how they could possibly have got away so quick otherwise.

SPRING SHOW OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.

BY W. A. MANDA.

The spring show of the Massachusetts Horticultural Society, notwithstanding the inclemency of the weather, came out above all expectations; and coming out of zero weather into a hall filled with the best of floral beauties seemed like being transported into some fairy land of eternal spring.

The chief attraction was certainly the Orchids, of which about one hundred plants were shown. The contributors were the well-known gentlemen, F. L. Ames, H. H. Hunnewell, R. Pratt and E. W. Gilmore. There were three plants of Dendrobium Ainsworthii, a hybrid between D. nobile and D. heterocarpum, one plant having about 100 fully expanded flowers, while another one, pseudo bulb, had 21 of its white and purple blossoms. D. Wardianum was represented with several fine plants, having pseudo bulbs 3 feet long and well flowered, as was also the rare D. Wardianum album; the old D. nobile was also shown in good specimens, beside D. heterocarpum, D. crassinode, D. primulinum, D. chrysotoxum, D. Pierardii and the odd D. Brymerianum, with its golden flowers and lip curiously cut. Phalænopsis were unusually good; some fine varieties of P. Stuartiana, also several P. Schilleriana,—one spike supported 49 expanded flowers. Several plants of P. grandiflora were also fine, one had a spike of 11 flowers and buds; this is not at all common for this species. The rare P. Brymeriana had also a nice spike of white and rose flowers. Of Odontoglossums, too, there were several species; some fine varieties of O. Alexandræ, one plant of O. crispum, the true type; a nice plant of O. Insleayi had about 50 flowers. O. Rossii majus was also shown in varieties; also some good O. Roezlii and O. triumphans. Cattleya Trianæ was shown in several vars., beside C. amethystoglossa and C. Warscewieczii delicata, showing 17 flowers. Lælia anceps in vars., one specially dark color, and the new L. harpophylla. Cypripedium insigne, a big plant; also C. Harrisii and C. venustum. Coelogyne cristata, Chatsworth var. was shown in two specimens, one with 36 spikes, 7 flowers to each spike; Cymbidium eburneum; C. Lowii with several spikes, one having 17 flowers; Calanthe nivalis, Masdevallia tovarensis, Dendrochilum glumaceum, with about 50 arching spikes of its sweet flowers; while Ada aurantiaca and a fine pan of Sophronites grandiflora made a fine contrast in color with their brilliant scarlet flowers. All this intermixed with palms, ferns, choice cut flowers of orchids, aroids, etc., presented a magnificent sight. All the plants were in perfect health and well flowered, for which D. Allan, F. Harris and W. Robinson, growers to the above named gentlemen, were awarded each a silver medal for skillful orchid culture.

The spring bulbs were very good, too; Mr. Gardener had fine flowered Hyacinths, Tulips, Narcissus, Primula sinensis, Convallaria majalis and a fine specimen of Imantophyllum miniatum. Mr. E. L. Beard showed very good Cyclamens, Narcissus, one named "Sir Watkins" was awarded first-class certificate of merit; beside this Mr. Beard had also good Hyacinths and the new Primula obconica. Mr. C. M. Hovey had a large display of Hyacinths, Tulips, Narcissus, cut Camellias and Roses. J. Dawson showed excellent pot Roses and fine hardy Primulas and Kalmia latifolia forced. Mr. M. P. Wilder put up a stand of Azaleas. Mr. A. W. Blake also showed 24 Standard Azaleas, well flowered. Messrs. J. B. Moore & Son exhibited good cut blooms of H. P. Roses. Mrs. Hayes had a fine Rhododendron Veitchii var. Mr. E. W. Gilmore exhibited Cinerarias, so did Mr. Sephard, besides violets and cut flowers in vars. Mr. D. Zirngiebel showed a fine strain of Pansies of good form and large size. Some cut Roses came from Mr. Meade, while Mrs. E. M. Gill showed as usual a good collection of cut flowers. Beside this may be mentioned Lilium tenuifolium, L. pulchellum, Trillium grandiflorum, Doronicum Caucasicum, Cypripedium parviflorum, C. candidum, Primula Sieboldii, Ornithogalum Arabicum, Aquilegia glandulosa and several fine dishes of fruit. *Bot. Gardens, Cambridge, Mass.*

CACTACEÆ AND AGAVE AT THE WORLD'S EXPOSITION.

BY J. E. W.

Possibly the display is the most extensive ever gotten together at one exhibition. One exhibitor, Mr. J. H. Erkener, of San Antonia, Texas, claims to have on exhibition twenty thousand specimens, obtained from Mexico at great personal labor and expense. The entire collection taken together is extremely interesting and instructing. The greater portion of the exhibit is made by Mexico. There are specimens from the size of an acorn to plants of Cereus giganticus 21 feet in height and 3½ feet in circumference.

Cereus, about 24 varieties, some of which are as follows:

C. longisetis, C. dubius, C. procumbens,
C. chloranthus, C. ctenoides, C. polyacanthus,
C. Schottii, &c.

Echinocactus, about 18 varieties:

E. Emoryi, E. brevihamatus, E. Le Contei,
E. longehamatus, E. Texensis, E. Wislizenii,
E. heliophorus, 4 ft. high and 9 ft. in circumference, &c.

Mamillaria, about 30 varieties:

M. echinus, M. dasyacantha, M. fissurata,
M. Grahamii, M. gummifera, M. applanata.

Opuntia, about 20 varieties:

O. Bigelovii, O. Engelmanni, O. arborescens,
O. frutescens, O. rufida, O. Schottii,
O. Wrightii, &c.

Agave Mexicana, specimens 12 feet across; the variety that produces the Mexican beverage:

A. geminiflora, A. revoluta, A. densiflora.

EDITORIAL NOTES.

PENNSYLVANIA HORTICULTURAL SOCIETY.—The spring exhibition at the end of March was one of the best made by the Society for many years. At the autumn exhibitions the interest centres chiefly in the fruits; the plants being mostly confined to ferns, palms, and foliage plants destitute of flowers. In the spring we look for flowers as a leading feature, and they did not disappoint any one on this occasion. The large hall was filled by magnificent collections, and the good culture exhibited was such as to call for high praise. Our notes were made principally with the view to giving information to readers everywhere, and we have therefore necessarily to omit many features of purely local interest deserving quite as much praise as the articles commented on.

A very pretty set of plants intended chiefly to show how to arrange for decoration was shown by Joseph Kift & Sons, and for this purpose the rather new Asparagus tenuissimus showed to great advantage. It is allied to the well-known "Smilax" of the florists, climbing as that does, but rather stiffer, and has leaves like the common garden Asparagus. Two plants were trained so as to form an arch at the end of a table, and indicated how many decorative uses it might be put to. We understand it can be readily increased from cuttings.

A good idea was expressed by porous plant vases. These are hollow, wreath-like vessels, water being admitted by an aperture at the top. Moss tied around is kept moist by percolation, and Ferns, Orchids, or other plants tied to them, grow much better than when tied to mere blocks of wood or even in baskets. The plants exhibited with these vases, showed remarkable vigor and health. A number of boxes of plants adapted to window culture were shown, and one in which common Snowdrops in bloom were arranged with Rex Begonias and Ferns, showed an extremely interesting combination. Another florist, Herman, had some boxes in which excellent combination was made of Tulips, with Lily of the Valley and Astilbe.

Some florist, whose name we did not find attached, has a plant of a white flowering winter Carnation called Edward Banyard, which seemed an extraordinary bloomer. The plant had over 100 good buds, besides small ones not worth counting. The calyx showed no disposition to burst at the side, and the crumpled petals had here and there an almost invisible crimson line. It

was interesting to note that in all the collections of pot plants by florists, the kinds used by them for cut flowers were prominently grown. For instance, in a very pretty collection for which a third premium was awarded to Charles Fox, Roses, Callas, Azaleas, Geraniums, and Rhododendrons, were the chief ornaments. Rhododendrons, by the way, were in many collections, and showed how easily they can be had in bloom in the winter. Nearly all the leading amateur premiums were taken by Mr. Alfred Warne, gardener to Clarence H. Clark, Esq., and they were so well and admirably grown that those who propose to contest the honors with him in future, will have some tolerably hard work to do. He had first for Azaleas, which were admirable specimens of care and skill. They were mostly grown on a depressed globose style, and were about 2 to 3 feet across the top. Here one might have a choice between kinds that were so full of flowers that not a leaf was visible on any part of the plants, and kinds that had here and there a few shoots pushing through the mass of flowers. Our taste runs toward the latter class, and we therefore feel like giving more praise to Stella, an orange crimson, and Marquis of Lorne, a brick red, than to Madame Vonder Creysson, where not one leaf was to be seen. Mr. Warne had first premium for 12 Rhododendrons, among which was one distinct species, called Rhododendron speciossimus, with the leaves and flowers in so many respects like a Kalmia, that those who love botany could see how closely the two genera were united through this intermediate.

Again we have Mr. Warne first for tulips. These were mostly of the Duc Van Tholl pattern, and were mostly five bulbs to a pot. Also was the first for Hyacinths, and we doubt whether better specimens of good culture were ever seen, even by the famous Holland growers. They were grown in 8-inch pots, and the green healthy-looking leaves were about six inches long and an inch wide. The flowers were on stout stalks about eighteen inches long, about one third of which were covered with the large and sweet flowers. A specimen Rhododendron by Mr. Warne was of the Augusta Van Geert, was about 2 feet by 2, and had thirteen heads of expanded flowers. Fergusson's Sons had the second for Rhododendrons. These were good plants with about eight heads on an average. Fergusson's second for Hyacinths were good plants in 4-inch pots. His second premium Cinerarias, were but about 12 inches high, with the panicles about 6 inches across, but the flowers were unusually large and very showy. The first premium Cinerarias, were by J. H. Campbell; these were also about a foot high, but the panicles were 9 or 10 inches across, and more branching bushy plants. Fergusson Sons had a showy collection of Orchids. Phalænopsis amabile had 5 flowers, and a pretty specimen of the lovely Vanda tricolor, about 2 feet high, had 3 spikes with about ten flowers on a spike. Mr. Warne had a specimen of Camellia candidissima which though only about 3 feet by 2, had 36 flower buds on it. Craig Brothers had a remarkably beautiful collection of Ferns, particularly attractive because they were not large coarse things, but just such kinds as could be found room for in an ordinary conservatory. Adiantum Wiegandii, a bluish-green Maiden-hair Fern, we noted particularly for its pretty compact habit, and Polypodium spordeocarpum was of much the same character as the well-known P. glaucum, but much more genteel in its behavior, not so intrusively pressing as that. Of course the indispensable Adiantum Farleyense was among them, and there was a plant of the curious pitcher leaf, Sarracenia Drummondii, the pitchers being about 2 feet long. Craig & Brother the first for Roses, but though the two to five Roses on each plant were large and fine, the plants were long and straggly, 2 or 3 feet high, in 8-inch pots. John Dick had first for double and single Geraniums. These were in 10-inch pots, about 18 inches high and 18 wide. The foliage was large and healthy, but the 7 or 8 heads to each plant rather small for the foliage. Mr. Charles F. Evans had magnificent blooms of W. F. Bennett rose. The petals were of the color of Jacqueminot, and extended three inches from the insertion at the calyx. Craig & Brother had a collection of 20 kinds of cut flowers of Carnations. Everybody admired them, and wondered why amateurs did not more appreciate their worth.

Lonsdale & Burton, the leading rose growers of Philadelphia, had a fine display of flowering branches, and the first premium Baroness Rothschild were five inches across, and the pretty globular buds of Perle des Jardins about three inches. Their Bon Silene showed that this admirable old Rose can by no means be displaced by any competitor. The other leading Roses in this collection were Cornelia Koch, and Catherine Mermet.

If the horticulturists of Philadelphia, especially the amateurs, will continue to encourage the society in the future, as they did on this occasion, it will not be long before they may sing:

"The good old times have come again."

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Some people advocate the pruning of ornamental trees in summer when they require it, for the reason that the wound seems to heal over without any injury to the tree. This is in a great measure correct. When large branches are cut in the spring the moisture oozes from the wound, and those minute funguses that prey on decayed or dead vegetation, get a start where moisture exists, and the wound is very soon on the high road to destruction. Hollow trees come more often from such wounds than from any other cause. In summer the leaves take all the sap, and the exposed surface becomes dry and hard. There is nothing more than a solid knot over which the bark eventually grows and entirely heals the wound. But there are counter-objections. The leaves are the life of a tree. A branch has to be cut close to the trunk in order to heal at all, because the sap which makes the new wood has to be prepared by the action of the leaves. Cutting away large masses of foliage weakens the vital power of trees. For instance, near where we are writing a Honey Locust hedge was planted about six years ago. These have been annually summer pruned, as all respectable hedge plants expect to be. The stems of these plants are about three inches in circumference now. But one in the hedge was suffered to grow up as a tree. It has never been summer pruned. The stem is eighteen inches in circumference. Any one who has noticed how hedges, annually pruned, keep small stems, will understand how summer pruning weakens a tree. Therefore, where rapid growth is desired, summer pruning to any great extent should not be practiced. But a little, judiciously done, will often be a greater benefit at this season than at any other, especially when some good form is desirable for the specimen. We can tell much better how to direct the branches of a tree in the growing season than when the leaves are off. There has been great progress in this kind of knowledge of late years.

In nothing has progress in gardening been better indicated than in the use of the pruning knife on evergreens. Up to the existence of the GARDENERS' MONTHLY, one might prune any trees except evergreens. Few articles ever took the public more by surprise, than our first paper showing that pruning benefited these plants. Now it is generally practiced, and it is believed to be followed with more striking results than when used on deciduous trees. In transplanting evergreens of all kinds from the woods, the best way to save their lives, is to cut them half back with a hedge shears, and when any come from the nurseries with bad roots, or roots which have accidentally got dry, a severe cutting back will save them. And then if we have an unsightly evergreen,—a one sided, or sparsely clothed evergreen,—if it is

cut back considerably it will push out again green all over, and make a nice tree. It must be carefully remembered, however, that in all these cases the leading shoot must be cut away also, or the side branches will not come out well. An idea prevails that a new leading shoot will not come out on the pine family after one has lost its first. But this is a mistake; sometimes they will not show a disposition to do so, side shoots near the leader's place will seem to put in a rival claim for the leadership the following year, but if these are then cut away they will not make a second attempt, and the real leader will then push on into its path of destiny.

The Scotch pine and the Chinese arborvitæ, are two plants which derive wonderful benefit from the pruning knife. Both these are very liable to get ragged when left entirely to their natural inclinations, but grow with a beautiful compact luxuriance under the occasional application of the knife. Indeed the Scotch pine with judicious pruning makes one of the most beautiful ornaments of the lawn and pleasure ground. It can be made to take many odd forms; one of the most picturesque is obtained by cutting off its head about ten feet high, and never let another leader grow. The side branches are all cut away except the upper tier, these spread then outwardly,—not exactly creeping, but flowing forward in the most luxurious green imaginable, making a much prettier arbor than any weeping tree we ever saw.

Increased attention has been given the Rhododendron and Azalea the few past seasons, as they prove to be much more easy to manage than people formerly thought. It is found to be a mistake that they need shade. It is only a cool soil they require. This is made by deepening it, and adding to it material which will keep it open and porous at all seasons. We accomplish this by adding fine brushwood with the heavy clay loam. Those who have them in good growing order should take care to keep them in good health by occasional top-dressing. This they enjoy, as the little hair-like roots fancy feeding in cool places, near the surface.

Evergreen hedges will require attention as they grow. Where the height desired has been attained the top and strong growths should be cut back while they are still watery. The side shoots need not be touched till past midsummer. All wise people now employ the conical shape for hedges. In cutting back the top growth at this season, the conical form can still be preserved.

All those who have set out trees the past spring, should take the first chance of a dry spell to loosen the soil deeply about them with a fork, and immediately after beat it down hard again with the heel, or some better "clod-crusher." Innumerable lives of trees may be saved by this simple practice.

Rare roses are increased by layers, buds and cuttings; layers are made of the strong growths as soon as the wood gets a little hard; a slit is cut in the upper side of the shoot, to be layered, and it is bent down into rich soil. Everything roots sooner in rich than in poor soil. The cut used to be made on the under side, but they are then liable to break on bending down. Budding is done by taking out a piece of bark with an eye, and inserting it under the bark of another kind and then tied in. It is nice amusement for ladies, and any florist will explain the process to those who do not know. Budded roses are not very popular owing to the tendency of the kinds used for stocks to throw up suckers, which, unless the intelligence of the grower is equal to keeping them off, in the end kills the kinds budded on them. Rose cuttings are generally easily raised by those who know little about it. In proportion as one becomes a skilful florist, the failures to strike rose cuttings increase. Almost every one who puts in a few "slips" of half ripe wood into a pot of earth, and sets the pot under a shady fence, succeeds; but as soon as he or she knows "all about it," they can't strike roses. Here at least is an encouragement to the new beginner.

COMMUNICATIONS.

CHRYSANTHEMUM FRAGMENTS.

BY WILLIAM T. HARDING.

Both spring and summer, as they gradually merge into each other, bring forth in continuous succession, an array of pretty flowers peculiar to each month, with remarkable punctuality. And so true is this, that the keen observer of vegetable physiology who carefully studies and closely watches nature's operations, can see how precisely regular are her habits, under normal conditions, and with what rigid nicety she performs her functions; would be able to recognize the correct month of the year—were it possible to forget—by the vegetation surrounding him. And, as the regular periods continue to come and go, unremittingly, the deep interest they naturally create, never ceases, until the last leaf and flower fades and falls into inevitable decay. And even then,

the delightful remembrance of their very agreeable, and truly companionable presence is not forgotten, when dreary winter returns, and, after tarrying awhile, retires to his boreal home, there to bide his time. And no sooner has the shivering "blustering railer," left us than we begin to look with joyous expectation for the coming time, when, at the bidding of gentle Flora, the portals of genial spring are thrown open, for the cheerful sunbeams to welcome and warm the sweet face of the first fair flower that comes out to greet us. With intense pleasure do we gaze upon the gorgeous floral cortege in its continuously changing phases, while passing by! Till we perceive it begins to lose its brilliant coloring, and becomes more attenuated, and less conspicuously attractive, than when first seen in its pristine beauty. One by one, the fragrant procession succumbs to the destructive touch of withering Time, and we are reminded in the poetical language of Holy Writ, of our fleeting existence—"He cometh up, and is cut down, like a flower," and thus, like them we pass away.

Contented mortals, who enjoy nature's favors, and there are many such—indeed their name is legion—who sedulously search for flowers in sunny spots and pleasant places, "where summer first unfolds her robes," and modestly displays her winsome features to every admirer in whose bosom beats a heart for love and friendship framed. And as the season advances, when the drooping petals begin to fade and fall around, and the dry leaves rustle in the tops and beneath the trees and are scattered to and fro with every changing wind, one of the apparently last efforts of Nature to avert for a while the temporary destruction of her cherished progeny, in fatal October and November, is to garnish the gardens again with gay Chrysanthemums. And when we see the vigorous heralds of old Frigidus, becomingly clad in seasonable attire, spread their brilliant pennons and beautiful banners to the autumnal breeze, we naturally feel proud of the last survivors, whose severely tested powers of endurance hold out as long as possible. Though compelled at last through sheer stress of weather, to lower their colors and surrender; yet, like lonely pickets, or silent sentinels, we sometimes see striking instances of how some of the hardiest of them will for a length of time continue to bid defiance to the freezing attacks of their unrelenting enemy, Jack Frost, in some snug or sheltered nook, where he has not found them out. And from these facts, we may infer that all, or most of them, would unflinchingly face the cold foe, for a longer time with but little discomfort, under similar conditions; while those that are more fully exposed can not withstand his frosty charges.

For open air, or out in the garden cultivation, close hedges, or wind breaks of evergreens, or the temporary shelter of a portable tent, are suggestive modes of protecting them, and thereby prolonging the season of these interesting and popular flowers. For those grown in pots, a cool greenhouse—pits or frames—will afford better protection, when very severe weather sets in. And thus, from a good stock, properly housed, a sufficiency of plants may be drawn at intervals, to give variety to other plants in warmer houses, when drifting snows enshroud the world outside. And for occasionally decorating the rooms, halls, or corridors in our dwellings, their superiors among herbaceous plants are few indeed. In fact, it would be difficult to mention anything less liable to suffer than they. Even should a few of them spoil while remaining in such close quarters, the loss will not be felt; as from a very small stock, specially saved, great numbers may be easily propagated for the same service another year.

Of all plants under cultivation none are more simple to manage or more suitable for decoration, indoors or outside, than a good collection of these much esteemed and showy flowers. And no better test of the great popularity of these dazzling beauties could be cited, than the interested throng of appreciative observers who visited the spacious Broad Street Horticultural Hall, in Philadelphia, from the fifth to the eighth of last November; to inspect and admire the many splendid varieties on exhibition there.

These old and familiar favorites came to us as strangers from the "Flowery Kingdom;" and were kindly taken in and adopted by our forefathers, more than one hundred years ago. And ever since then they have continued to increase in number, and multiply into many colored kinds and novel forms to the great surprise and delight of those who foster them. Until the brief interregnum which occurred when the majestic Dahlia rose up in all its regal splendor as another claimant for our recognition, and partially eclipsed the brilliancy of its smaller and less ostentatious companion, they maintained the distinguished position justly conceded them. Since then they have wonderfully developed from their former comeliness into absolute objects of striking beauty.

Had it been the privilege of all the many readers of this magazine to have shared with the favored

ones who had the good fortune to behold the magnificent spectacle the writer vainly strives to depict in Philadelphia last November, like him, they would feel how utterly futile it is to attempt to give expression to the feelings of surprise and admiration the sight of so much beauty produces when suddenly coming in view. The numerous examples of excellent cultivation comprised fine specimens of a few of the good old kinds that will always claim attention; with the best modern varieties of Japanese and Chinese species, whose general good qualities could not possibly be surpassed, I feel confident, at any similar exhibition on this continent. When making these positive assertions I speak advisedly from what I have seen and know about them in this and other lands.

In the famous Temple Gardens of London, where Shakspeare alleges the long and sanguinary quarrel between the rival houses of York and Lancaster first began—the factions of which were symbolized by a white and red rose—and which are now at this day more celebrated for fine, handsome Chrysanthemums, than beautiful Roses, where they are said to flourish better, in the damp dense smoke of that vast city, than they do in their native countries. And when the man of science says, "the coal burned in London alone disengages into the atmosphere three hundred thousand tons of sulphurous acid annually;" it almost seems incredible they could exist and thrive as undoubtedly they do, in the stifling, murky fumes of the modern Babylon. From the recollections I have of the noted Temple Garden plants, I can say without the least hesitation, that I candidly believe the Philadelphia grown ones were as near par with them as possible. The only perceptible difference appeared to be in the somewhat thinner foliage about the base of the plants, caused by our brighter sun and hotter summers; while in floriferous beauty and symmetrical form they in every respect were quite their equal.

Mount Holly, N. J.

WEARING OF THE EYE IN ZINC LABELS.

BY F. W.

Regarding the objection that the eyelet hole in a zinc label soon wears away when it is suspended by a copper wire, I have used them for some years and, as I understand it, the wearing is not from galvanic action but from the label swinging loosely in the wind. To prevent this I have practiced—before attaching the label to the tree—giving the ends of the copper wire a twist of one or two turns close down above the label. This simply prevents the label swinging on the wire; where it hangs loosely the almost unceasing vibrating in the wind soon wears it away. I would add—although it has already been given in GARDENERS' MONTHLY—that the best thing for marking zinc labels, especially where they are exposed to the weather, is a common lead pencil. The material of the pencil soon corrodes the surface of the metal and the marking becomes almost as lasting as the metal. In this case the corrosion may be caused by galvanic action, due to the carbon of the plumbago; burying the label in the earth does not obliterate the marking but increases the corrosive action. This using of a pencil the writer accidentally discovered in 1847, while using zinc labels, with ink, according to a recipe on page 575 of the Horticulturist of that year—getting out of the ink in the hurry of planting, a pencil was used. *Newark, N. Y., April 4.*

[In case there should be any possible objection, our correspondent sends us a label with a galvanized eyelet inserted, as the metallic ones are in ordinary parchment tags.—Ed. G. M.]

THE CHINA TREE.

BY MRS. J. S. R. THOMSON.

You failed to do full justice to Melia Azederach, Pride of India; one variety called in ignorance "Umbrella Tree" from its peculiar habit of growth forming a dense round head, flattish underneath, which, viewed at a distance, resembles somewhat an umbrella in shape. This tree here in the South is prized highly for several reasons, partly economic and partly for its beauty. First—It is a beautiful shade tree, furnished in May with myriads of exquisitely fragrant lavender or lilac flowers, which render the air intoxicating in its sweetness. Second—For its valuable wood which works up beautifully as cabinet work or interior wood work to our dwellings. My father's stair-way made of it, with handsomely turned newel post and balustrade, is often mistaken for mahogany, which it closely resembles, only a lighter tint; and, third—for its useful berries, which southern housewives used in ante-bellum days (when we had pork to cure) to throw on the fires built to smoke our meat; wherein the virtue lay "deponent sayeth not," but guess, Yankee like, it must have destroyed the larvæ of the skipper.

There are several varieties of this tree. Of the Umbrella variety I have one I am very proud of, planted in my back yard—not flower garden,

mark ye. It was obtained from seed of a tree growing on historical ground—Alamo, Texas—endeared to every American heart, but more so to South Carolinians, for there our brave heroes met death as only heroes can, and there their deeds are recorded. "Thermopylæ had her messengers of defeat, Alamo had none." *Spartansburg, S. C.*

THE MARBLED ROSE.

BY MRS. M. D. WELLCOME.

It was only a day or two before receiving the GARDENERS' MONTHLY that I was thinking of this rose, so familiar to me in my childhood, but which I have not seen for forty or more years. I was therefore specially interested in reading Mrs. Thomson's article respecting it, under its true name; for I have no doubt that the York and Lancaster rose is identical with the one I only knew as the Marbled Rose. I have often queried why it never appears in the Rose catalogues, and whether it was lost to the world. The neighbor who had the red and white rose, had another she called the Damask rose, and one she called the Hundred-leaf rose. This was really the finest of all. It was a solid rose and worthy of its name. I never have seen a rose so solid full of leaves; its color, if I remember right, was a delicate carmine, shading to a very light blush, and so deliciously sweet. My home when a child was in a lone farmhouse, and there were no rose bushes, no flowering shrubs, nothing but a little girl's garden of the most simple flowers grown and a bush of Southernwood! Well do I remember how fond our dear mother was of that fragrant plant. You may be sure that I always visited my good neighbor who lived half a mile away, and had the roses, when I knew they were in bloom. She had lilacs too, and tall hollyhocks with their great single blooms. How memory runs back to those far away years! I am a child again! I see those flowers just as I saw them then, and remember the color of the hollyhocks—pink, yellow and maroon. Well, if I did not have the cultured flowers, I had the wild ones all around me in grand profusion.

Ere the snow had fully melted, I went in quest of the May flowers—April flowers they were more truly; and by their true name, Trailing Arbutus, I never knew them till long years after. They grew in the greatest profusion on the farm, and I knew well where the largest and pinkest could be found. What basketfuls I gathered, and their perfume filled the house. Just about one year ago, a lady who lives very near my childhood home, though an entire stranger to me, gathered some of the blossoms from the old home, and sent them to me. It was so kind and thoughtful of her. There were Anemones and Hepaticas and Aquilegias in profusion, beautiful wild orchids, the lowly violets, and in the woods I found the white and, far more rare, the yellow violet. There were great scarlet lilies in the field among the tall waving grass, and in late autumn, the fringed Gentian grew abundantly on a hill-side. It was to me a lovely flower, but I never learned its name till many years after I had gone far away.

But whither am I drifting? I took my pen to write a single paragraph about the red and white rose, and it has led me rambling again over the knolls and hills in search of the flowers of my childhood; surely I am in my dotage!

Yarmouth, Maine.

FLOWER NOTES FROM NEW ORLEANS.

BY M. H. LESTER.

Burchellia capensis is now in bloom, and I like it. Sparmannia Africana makes too much foliage for the amount of flower to be useful as a flowering plant.

Eriostemon scaber and others are good. I have got as good a plant as any one has, of Mackoya bella—in a 7-inch pot—but I have never seen a flower on it yet. I shall be more than grateful if some of your correspondents will tell me what I shall do to make it bloom. Brownea coccinea has not bloomed here yet, but it's very interesting to watch the new foliage in the course of development.

What I got for Anthurium feriensis is now in bloom, but the flower does not seem to correspond with the plate in the catalogues. However, I will wait for another flower before I condemn it.

The pleasantest forenoon I spent in a long time was a day or so ago with our mutual friend in horticulture, W. H. Chadwick, Esq., the celebrated orchid amateur of Chicago. I was glad to find Mr. Chadwick not of a class of visitors that want to get away before hardly there. They see all in five minutes. To another class everything looks like a Calla Lily or a "Wax Begonia;" and, "have you got any Smilax?" is about about all the inquiry they have to make. Mr. C., like a good soldier, will dispute every inch of ground in the houses and outside, and if there be anything he does not know he is not ashamed to inquire; but when he gets in an orchid house he is a perfect revelation. It is too bad we see so few like him.

I have four varieties of Passiflora in bloom in the houses; and the city is redolent with the perfume of Magnolia fuscata. And orange blossoms have got to be such a nuisance. I have to rake them up two or three times a week to keep them from scalding the grass.

New Orleans, La., April 6th.

EDITORIAL NOTES.

RAISING NEW VARIETIES OF GLADIOLUS.—Mr. James Douglas gives the *Gardeners' Magazine* his method as follows: "The variety intended to bear seeds must be watched, and as soon as the anthers can be perceived in the centre of the half opened flowers they must be removed with the finger and thumb, before the pollen cases burst. In two days more the flowers will be fully open, and the stigmatic portion will be quite ready to be dusted with the pollen from another variety. I dust the seed bearing flowers about four times. It is easy to do this, because at the time of setting the blossoms we go over the flowers twice a day. In the morning between nine and ten, and in the afternoon between two and three. The pods soon begin to swell, and when at their full size they very speedily ripen. They are ready to be gathered as soon as the pods crack from the top downwards. When gathered dry them in an airy room. The pods may be wrapped up in paper loosely until April, when they should be sown, about the first day in that month. My plan is to prepare a hot-bed for them, and to sow about fifty seeds in a 7-inch pot, using good light compost. The seeds vegetate in two weeks, and the way to be successful is to keep the young plants growing on without any check. The plants grow very rapidly, but it is best not to disturb them. As they increase in size, gradually admit more air, until by the end of May the lights may be removed entirely; placing them over the frames only in very rough and frosty weather. By the end of September or not later than the middle of October, the young seedlings have completed their growth, and the pots will be full of bulbs varying in size from a marrow pea to a filbert. The pots may be laid on their sides until the leaves decay, when the next step will be to shake the bulbs out, wrap them up in paper, and store the packages in a dry place where frost cannot reach them. If the soil in the pots is allowed to become moist after having been dried off the bulbs will start into growth in a few days, and will shoot up two inches in as many weeks. Through an accident of this kind I had 500 bulbs start into growth out of 1,000 before the end of October."

THE WINTER ACONITE.—It is a matter of surprise that this lovely flower is not more common in American gardens. It is not much in love with the common flower garden, but loves to take care of itself in woods or thickets, or other places where it can go on for years without being disturbed. The yellow flowers are prettier than any buttercup, and are open frequently before the snow has wholly gone away. It is so generally known by its common name that one is not likely to get something else when ordering it, but it is well to say that its botanical name is Eranthus hyemalis. Thomas Noel has some pretty lines on the Winter Aconite which we here reproduce:

Flower, that foretell'st a Spring thou ne'er shalt see,
Yet smilest still upon thy wintry-day,
Content with thy joy-giving destiny,
Nor envying fairer flowers their festal May,—
O golden-chaliced Aconite! I'll lay
To heart the lesson that thou teachest me;
I, too, contented with my times will be,
And still a placid aspect will display
In tempest-troubled seasons,—nor repine
That others, coming after, shall enjoy
A calmer day, a sunnier sky than mine;
To speed the present, be my sweet employ;
To cast into a stormy world my mite
Of cheer, like thee, gloom-gilding Aconite!

BROKEN BRANCHES OF NORWAY SPRUCE.—Under Norway Spruce trees towards spring, are frequently found broken branches in considerable quantities. The Editor has always regarded this as resulting from the operations of a twig borer or girdler. Desiring to know more of the supposed insect, specimens were recently sent to Professor Riley, who doubts whether the trouble comes from an insect at all. This makes the matter mysterious. And it is well worthy of the attention of acute observers. No adequate cause for these broken branches has been suggested. Mice or squirrels cannot do it, as the twigs are not cut by teeth, but broken, as examination by a lens clearly shows.

DISEASE OF THE HOLLYHOCK.—This once lovely flower promises soon to be extinct. It has been relentlessly pursued by a fungus known as Puccinia malvacearum, which so weakens it in a year or two it dwindles and dies. It is as bad in the old world as in America. A number of other herbaceous plants suffer under culture in the same way.

ROSA RUBRIFOLIA.—The taste for the original wild single roses has developed remarkably since the introduction of the Rosa rugosa. The *Journal des Roses* says that one of the best is Rosa rubrifolia—red-leaved Rose. It is a native of Dauphiny, chiefly in the Vodges, and the humid mountains of Auvergne.

PASSION FLOWER, CONSTANCE ELLIOTT.—A pure white variety raised from the old Passiflora cœrulea, has appeared in England. It is sweet-scented, and will stand a few degrees of frost without injury.

SCRAPS AND QUERIES.

HYACINTH BULBS.—"T. S. G." asks: "Are Hyacinth bulbs that have bloomed in pots of earth in the house of any value? How shall they be treated to bloom again; either in pots or in the open ground?"

[If treated as they do in Holland, they would come in again in time. The young offshoots are planted in rich alluvial soil, and not allowed to bloom till several years, but if just planted out in the garden to take care of themselves, the future blooms will be small and inferior.—Ed. G. M.]

CARE OF LAWNS.—We have called attention to the well-known fact, that no plant can live without green leaves, and plenty of light to keep them green; and then to the obvious fact, that if we cut grass low and keep it cut low, small creeping weeds that could have no chance to grow if the grass were long, will thrive and flourish, ultimately killing the grass which the scythe or mower has kept down. An eminent landscape gardener had his attention called to these views and writes to his correspondent in a southern state as follows:

"I have read the articles in the GARDENERS' MONTHLY in regard to lawns. Mr. Meehan's experience does accord with our experience, in the cutting of lawns. The frequent cutting of grass strengthens the roots of the smaller weeds and gives them power to drive out the coarser grasses. It is true that the crab grass, fox-tail, buck-horn, &c., creep into lawns late in the season when the finer kinds have considerably slackened their growth. But to stop cutting at that time would be to abandon the field to the enemy. You know how quickly the fox-tail and buck-horn spring up and go to seed, and can imagine the rapid reproduction of these pests that would take place were no check placed upon their growth. Of course you have not any trouble of this kind; the Bermuda grass taking possession to the exclusion of everything else. The making of a good lawn depends chiefly, as Mr. Meehan says, on the proper preparation of the ground, the selection of proper seed and the subsequent care; but also, to a considerable extent, on climatic conditions.

"At Newport, R. I., they have the finest lawns in America and they are cut not less often than once a week, but frequently as often as once in four or five days. In the South, where the Bermuda has control, there is no problem. It is only in the North where the trouble presents itself. The addition of a small application of salt is an excellent practice, though very old. Salt induces moisture, and also benefits the grass by the chlorine and soda which it contains."

[This excellent letter on general lawn culture, shows how hard it is to get any practice down to rule. Instead of rules for practice, we usually prefer to offer principles and let the practice take care of itself. The principle involved here is that if we check the stronger plants—grass say for instance,—weaker plants—Speedwells for illustration—the great pests of lawns here—will be strengthened. But we don't want to strengthen these, but to weaken them; therefore in practice, if we desire to weaken these dwarf creeping weeds, we must let the grass grow fast enough to overshadow and shade them.

But in our correspondent's case we have stronger and coarser grasses that we do not want, struggling with the weaker grass which we desire to strengthen. The cutting-back practice here is not in accord with the principle, but the reverse. We desire to encourage the weaker, not to destroy it as in the former case. Hence the practice of letting the grass grow in the fall would be, as our correspondent says, very bad practice. It is just what we should recommend, and, is in accord and not in opposition to the principle laid down.—Ed. G. M.]

DOUBLE FRINGED PETUNIAS.—Mr. Rupp, Shiremantown, Pa., writes: "I send to you by this mail, three flowers of my new Petunias I told you about last winter in Lancaster. The one in the middle is only about two-thirds the average size; the plant I cut it from had at least fifty flowers and buds at one time. I think this the finest of them. I have six varieties. I grew them from seed and don't think there are any like them in the country, and probably not any where. Every one who saw them gave them the highest praise."

[These are the double fringed forms that we noted recently as being offered this season by the Prussian seedsmen. These are the first living examples we have seen. They are particularly attractive.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

WINTER AND SPRING FLOWERING DENDROBES.

BY JOHN MURCHIE.

The winter and spring flowering members of the Dendrobium family are among the most beautiful, and they are certainly the most enjoyable, as at this season of the year (March) the greenhouse is a very comfortable place. And even a few green leaves seem to give more pleasure to many visitors than the finest collection would in the hot summer months.

Dendrobiums differ very much in appearance. Some are evergreen, others deciduous; some have short, stout, club-shaped bulbs with only a few leaves at the top; others again have tall, erect growing stems clothed with evergreen leaves their entire length, while others are drooping and deciduous. They also differ very much in their manner of flowering. All are easily grown when given proper attention. Nearly all of them are very tenacious of life, and very rarely die outright, but will cling to life under conditions that would kill almost any other plant. Yet when given a little care and attention they adapt themselves to their surroundings wonderfully well.

The culture of the different species, and the mode of treatment best suited to each, can only be gained after some experience. The application of water has much to do with the thrift of this grand genus; some of the species require water to be given from the syringe every day and from the watering-pot two or three times a week. Such sorts as Devonianum, Pierardi, and many others, require this treatment during the growing season. These kinds have long, slender stems; others that have stouter and more fleshy stems require much less water, and seem to enjoy drawing subsistence from their own storehouse, the old pseudo-bulbs. Some require a much longer period of rest than others; this is true of densiflorum, farmerii, thyrsiflorum, and others of the same character, for unless they have a long rest they do not flower freely.

Many of the Dendrobes make fine growths in the winter or what ought to be their resting period. This should be avoided as much as possible, as it always prevents profusion of bloom, and the plants generally make two in the year, the last not as strong as the first. I used to think, that too much moisture in the house was the cause of this, and probably it has something to do with it, but I am satisfied that over watering in the fall just as growth is being completed has more to do with this winter growth than atmospheric moisture afterward; as growth nears completion water should be given sparingly and the plants should have full exposure to the sunlight, with airy quarters, to ripen up their growths. With such species as nobile, Wardianum, Devonianum, etc., this is most essential; if too much water be given they will start into growth again, before, or just as the season's growth is completed, it is then impossible to check them without injury to the plants, and enough water should be given to keep the old bulbs plump until the young have made roots, when a little more may be given. But plants growing in winter will not require a third of the water that growing plants do in the summer. I never give water in the winter unless I see signs of shrivelling when a little water at the root and a gentle syringe overhead restores them to proper condition.

The following have bloomed with us here and made the house gay all winter: D. nobile, in succession, D. Wardianum, D. lituiflorum, D. Cambridgianum, D. primulinum, D. densiflorum, D. Pierardi (this with more than 600 flowers), D. crassinode, D. Devonianum, D. pulchellum, D. superbum. The three last are just beginning to open their flowers now. *Sharon, Pa., March, 1885.*

MIXED PLANTS IN GREENHOUSES.

BY MANSFIELD MILTON.

We are better informed in the culture of greenhouse plants than was known, say ten or fifteen years ago. Then it was thought special plants should have special houses to insure success in their culture. Especially was this the case in regard to Orchids, but now in almost all collections of greenhouse plants are to be found more or less of the Orchid family.

A few days ago I visited the greenhouses in my neighboring town of Sharon, Pa., presided over by your correspondent, John Murchie, and there are to be seen some of the finest flowered orchids, comprising such kinds as Phalænopsis grandiflora, Schilleriana, and amabilis, Cœlogyne cristata, and flaccida, Dendrobium nobile, Farmerii, crassinode, albo sanguinea, and Paradianum, Phajus grandifolius, Cyprepids, Lælias, Cattleyas, Lycastes and Oncidiums, and lots of others too numerous to mention; all in the best of health, and growing in a general collection of such plants as Begonias of all kinds, Azaleas, Adiantums and other ferns, Roses, and in fact all kinds of plants found in a general collection of greenhouse plants. Mr. Murchie is an enthusiast in the business, and does not like to be outwitted in the culture of anything. He especially loves Orchid culture and having nothing but the houses where a general collection of plants are grown to keep his favorites, has studied the general laws governing vegetable life and the requirements necessary for maintaining it in a healthy condition.

A temperature during winter of from 50° to 60° as a minimum, having sufficient moisture at all times, is suitable for the flowering of most kinds of greenhouse plants and warm enough for a good many of what are termed East Indian Orchids, requiring a high, moist temperature during the time they are making their growth, which is generally done during summer, when a high temperature can be kept up without the aid of much artificial heat. At the same time plenty of ventilation being given, thereby ripening their growths into perfection, and making them in better condition for flowering abundantly and enduring a somewhat adverse treatment during a few winter months.

Our warm summers give us a better opportunity for thoroughly ripening Orchids of all kinds, natives of warm regions, than they have in countries where the mean temperature is much lower than with us. On the other hand, what is considered a greenhouse temperature during winter with us, would in England be suitable for an intermediate house. This to a large extent is why we grow with success so many plants in our greenhouses, which are considered unsuitable for the greenhouses in the old countries.

Orchids of all kinds can now be bought at much more reasonable prices than they could formerly. Importers here now get them direct from their native countries instead of getting them second-handed from Europe; which is not only the means of giving us cheaper plants, but also of giving us a chance of getting superior kinds than formerly, as seldom did any new and extra kind find its way across the Atlantic so long as a poorer variety of the same thing could be had to send.

There are a good many different varieties even of the same species to be met with in their native habitat, and by importing directly we get some of the finer kinds, as well as the poorer varieties. *Youngstown, O.*

CORAL TREE.

BY MR. CHARLES E. PARNELL.

The cockscomb coral tree, Erythrina crista-galli is a very beautiful summer blooming shrub of deciduous habit, belonging to the natural order Leguminosæ, and it is a native of Brazil, from whence it was introduced in 1771. In its native country it is said to attain to the height of a tree, some forty feet or more, but in cultivation it rarely exceeds six or eight feet. It is a plant of robust, vigorous growth, having an arboreous unarmed stem, the prickly petioles bearing the bright green ternate leaves which are slightly notched on the under side. The pea-shaped flowers which are very showy, and of a brilliant scarlet crimson color, are produced in pairs at the axils of the leaves, during the plant's season of growth, some three or four times. This Erythrina is a plant easily grown, and can be cultivated by all, as during the winter season it requires no other protection than that offered by a dry frost-proof cellar. When grown as a single specimen on the lawn it forms an object of great beauty; its showy crimson scarlet flowers form such a decided contrast with its bright, glossy foliage, that it cannot fail to attract the attention even of the most indifferent or careless observer. The preferable method of cultivating this plant is to set it out about the tenth of May in a well enriched deep soil, and as soon as hot, dry weather sets in a liberal mulch of coarse stable manure applied and liberal supplies of water given. Thus treated the plants will produce very satisfactory results until the foliage is destroyed by frost, when the plants should be carefully taken up, placed in a tub or box, the roots covered with earth and stored in any dry frost-proof cellar, where it can remain until wanted for planting out another season. The plants are apt to grow rather straggling, and on this account they should be cut back into shape, before being planted out in the spring. In hot, dry weather the plant is sometimes troubled by the red spider and as soon as these pests are noticed, the plants should be copiously syringed until the pests are destroyed. Propagation is

effected by seeds and cuttings. Cuttings, if taken off at a joint and placed in sand in gentle bottom heat, will soon take root, and if the young plants are potted off as soon as rooted, and liberally treated, nice flowering specimens will soon be obtained. If we desire to increase the plants by means of seeds, which by the way are freely produced—they should be sown as early as possible, about the first of January, and flowering plants will be obtained the coming summer. Sow the seeds thinly, placing the eye down, in a well drained pot or pan of light rich soil and place in a warm, moist situation, and as soon as the young plants are strong enough to handle, carefully remove them into three-inch pots similarly prepared, then place them in a warm, moist situation, and use all available means to obtain as strong plants as possible before they are planted outside.

The generic name is derived from "erythros," red, the color of the flowers, and the specific in allusion to the fancied resemblance the flowers bear in form and color to the comb of a cock.

Queens, L. I., New York.

FLOWERING OF THE SUNSET ROSE.

BY F. F. SMITH.

I notice in May number remarks by Mr. A. Williams on Sunset Rose and blind wood. I have two thousand plants of this (with me) valuable rose in beds and in pots. I find it in habit of bloom and growth identical with Perle des Jardins. The buds are better keepers. It is my opinion that the "blind wood" is a natural result of too low temperature. I have houses running east and west, 100 feet in length, two-thirds of the roof pitched to the south, with drop to the east of six inches in the ridge pole, gutters and plates, glass east ends, thus catching all the sunlight I can.

Soil—sand loam fed with clay, cow manure and ground bone. Soil well stirred every week, with bone dust on the surface. Roses syringed every morning when the sun shines, with temperature at about 70°. Night temperature at 55° to 62°.

It is my impression that it is best to take cuttings from blooming shoots, of the strongest growth and from the strongest plants. It is also my experience that free budding is much enhanced if the soil is not over-watered. No florist has ever worked for me that uses as little water over the soil as I do. I do not want my soil leached by over water, or any forcing by extra heat. Constant steady treatment gives me plenty of blooms, and foliage to the ground. *Normal Park, Illinois.*

THE SUNSET ROSE.

BY PETER HENDERSON.

In the May number, Mr. A. Williams, of Sharon, Pa., says that his Sunset roses this winter have shown, in a marked degree, a tendency to make blind instead of flowering shoots, and asks if this is not in consequence of its having been propagated from blind shoots? It was formerly held that to get the best results from roses, plants should only be propagated from the flowering shoots; but few rose-growers now believe that to have any influence whatever in the tendency to prolific flowering, and that as a matter of fact, the great majority of roses are now propagated from blind shoots, also that as good, if not better results now are obtained by our large rose-growers than ever before.

The past winter we have had about equal quantities of Sunset and Perle des Jardins, grown both in pots and planted out in benches, and the flowering qualities of each have been almost identical—both flowering profusely. Mr. Williams' complaint is the first I have heard of a tendency in the "Sunset" to make blind shoots. I am afraid it may be attributed to another cause, rather than that of having been propagated from blind shoots.

About a dozen years ago I had a bench of very fine Safrano roses in excellent health, two or three feet in height, that showed a tendency to run blind to an unusual degree. One of the rose-growers from Madison, N. J., calling one day, I asked him what he thought was the matter. He said if I would allow him to pull up a plant he could show me. He did so, and shook from the roots of the plant pulled up, scores of maggots (the larvæ of the rose-bug). That was the first time I had seen this pest. Whenever roses assume a barren condition and are otherwise healthy, I think it will be found that the larvæ of the rose-bug, in most cases, are sapping the vitality of the plant.

It is possible that this may account for the barrenness of flower in Mr. Williams' "Sunsets," for it certainly is not peculiar to that variety, nor do I think the way it was propagated has anything to do with it. The only remedy we have ever found for the rose-bug is to destroy the perfect insect, which is found, usually, in pairs crawling under the leaves; it is not easily seen but its presence is known by its cutting a semi-circular piece out of the edge of the leaves. We have completely eradicated them by giving our boys a dollar a hundred for catching the bugs. No insecticide we have ever tried will kill the bug that does not at the same time, less or more, injure the foliage; and to destroy the larvæ in the soil we are even more helpless. *Jersey City, N. J.*

[Mr. Henderson makes a good point in observing that sterile branches come from many conditions. Many years ago greenhouse builders kept chiefly in view, how to enclose the most space at the least cost. This meant somewhat flat houses. The steeper the pitch, the more material and the more cost. The editor has one such house in mind; roses were grown in it; they flowered very badly. Along the back wall some Noisettes, such as Lamarque and others, were planted and would not bloom at all. During the summer the ventilators were thrown open, and so remained all summer. Branches of these Noisette roses came through the ventilators and spread over the glass; all these exposed branches flowered in profusion; none of those that remained growing in the house flowered at all. It was one of our early lessons on the value of steep roofs and plenty of direct light for obtaining flowers from winter plants. And it is here offered as a lesson that may have some bearing on the question of blind shoots. There are, however, many other influences as well as want of direct light—and these may prevail even in spite of abundance of direct light.—Ed. G. M.]

THE CULTURE OF CACTUSES.

BY N. ROBERTSON.

Since sending you my photographs of flower beds and mentioning that there was a Cactus bed in the background, I have had several communications asking me to give some hints on Cactus culture through your monthly, as it would be beneficial to many; so with this in view I give what I have found to be the most successful method of treating them. Cactuses as a general thing do not hold a very prominent position in most collections, and why, I can hardly understand, for there are but few plants that will yield a more gorgeous display of flowers than they do, when well-cultivated. If the plants had nothing more to recommend them than their curious forms they would be worth a place in all collections. I know of no plants easier of cultivation than these are; but whatever species are met with in collections, it is usual to find all subjected to the same treatment as other greenhouse plants. In this way no one need ever expect to be successful. A study of their natural habitats will soon show this. As they come from Mexico, Brazil and Peru, with their dry and wet seasons, unless they have a dry season and a rest but few flowers need be expected. The best way to treat them is to put them away in some place, where the temperature does not fall below 45°, give no water unless they are very much shriveled up. Never mind a little shrivel, that does them good in most cases. Beware of cold damp places, or you will be sure to rot your plants. Those that flower late in the fall or spring, I put outside, taking now and then a casual glance to see that they do not suffer too much, but there is little danger of that.

In potting them special attention must be given to material and drainage. The material I use consists of good loam, old lime rubbish, with a fair share of coarse sand. The lime rubbish must be taken from some old ruin; fresh is not good. Arrange to insure drainage, and above all things do not overpot them. Keep them in as small pots as the roots will admit of. The time to pot is just before you start them to grow; but never change them unless you see they are very much bound in the pot, and when you do so be sure to cut away all dead roots, or they will destroy the soil. The lumps of lime rubbish are more for keeping the soil open and ensuring perfect drainage than for any other thing. When growing, a fair share of water may be given. Cleanliness is always a material point to be observed, and a wash over now and then with tepid water will do much to invigorate them. This should be especially attended to when taking them from their resting places into the house. The mealy bug is perhaps, their worst enemy, and sometimes it is necessary to use some insecticide that will run in on them and destroy them. When growing let them have free sunlight, and from 60° to 90° in temperature will do them no harm; in fact, most of them enjoy a very high temperature. I keep mine on shelves close to the glass; and when they are coming into flower place them amongst other plants in the houses, and they make a gorgeous display. At this time as low a temperature as they will bear will lengthen the duration of the flower.

One party writes me asking how to make a bed of Cactus. In all cases the plants should be put so that they can be all seen. If only from one side, then the tallest should be in the background. If to be seen from all sides, the tallest should occupy the centre, studying to vary the subjects as much as possible. I prefer to plunge the pots, for in handling them men may be heard expressing themselves in no very nice language. You must be careful that the bed is complete in its drainage. I am frequently asked if there is any work pub-

lished on the Cactus. I know of none of any importance, although I have frequently searched for one. Such a work would be of great value to many, for I know of no class of plants so badly mixed as they are. [Castle's Cactaceous Plants may be had at the GARDENERS' MONTHLY office for 50 cts. Ed. G. M.] Every one seems to have chosen a name for himself. My experience has been that from ten different parties you will have almost ten different specific names, but really only the one species of plant. *Government Grounds, Canada.*

IMPROVEMENTS IN PROPAGATING PLANTS.

BY W. M. BOWRON.

In your answer to Mrs. J. S. R. Thomson, at page 106, you speak of boxes of rooted heath cuttings and give us to understand that the illiterate youth and the sand mush had "done done it," to use the darky phrase. Can this be really so? Was old Donald Beaton with his 50 years of life in harness as a head gardener playing with our inexperience when he spoke of taking single cuttings of Erica, putting in thumb pots "with peat and broken sandstone in lumps, getting finer toward the top, and at least half an inch of silver sand on the surface?" The whole was to be surmounted with a bell glass and shaded from the sun, and the glass wiped out every morning for months—eight months he speaks of in one instance in the *Journal of Horticulture* of 20 years ago. Has horticulture grown since that day to the simple means you indicate? I am interested in your reply, for I used to grow Cape Heaths in England in a greenhouse suited to them. Are they to be grown in the fierce dry heats of this country?

I have before me two trade catalogues. One tells me to water Primula sinensis sparingly and the other says "needs plenty of water." Again, certain correspondents seem to have had difficulty in raising it from seed. My experience with this plant is, that you can water it much, water it little, give it rich soil or starve it, keep it in a steady temperature or give it the jerky alterations of an amateur fired house and its bells will open at the proper time if—and it is indispensable—it has drainage. In the seedling stage it can be raised without difficulty, with drainage perfect and protection from burning sun heat. I am glad to see the Gloxinia recommended as an amateur's flower. A fifty-cent package of seed gave me several dozens of plants last summer and the bulk of them bloomed in the fall. Nothing could be more beautiful, if I except the lovely hues of that old trailer Torenia Asiatica. *So. Pittsburg, Tenn.*

[The Heaths in our mind when speaking were E. stricta, E. cineria, E. vagans, and E. vulgaris. These are hardy in this part of Pennsylvania, if a few dry leaves are scattered over them in the fall. With the tenderer species we have had no experience in propagating in this easy way, but have no doubt of similar success. Other Cape and Australian plants are so raised; for instance, Polygalas, Metrosideros, Acacias, Chorozemas, Genistas, and so forth. Everything in fact of this class without distinction are placed in square boxes or round pans of sand, water-tight and placed on tables or benches in a full light greenhouse, or partially shaded one in June, July, and August. Being water-tight, they need no water, or very little as evaporation takes some away. Our present impression from what we have seen the past few years is, that there is nothing at all but will grow on this simple plan. The only art is in selecting the wood for propagating. Mature wood will not do, and in very few instances must be as much as half ripe.

Possibly our warm suns have given an advantage that Donald Beaton never had. The cuttings under this treatment seem to like hot sun. We know one amateur who was very successful with these soft wood rose cuttings, and who had no greenhouse. He used to place his saucers of sandy mush on the hot gravel path of his vegetable garden. These rose cuttings would be all fully rooted under two weeks of this treatment.—Ed. G. M.]

EDITORIAL NOTES.

ELECTRICITY IN BOUQUETS.—On a recent public occasion the Princess of Wales carried a bouquet, in the centre of which was a small electric light. It was too heavy to carry comfortably, but the electric engineers think they can do better next time.

ARRANGEMENT OF ROSES AS CUT FLOWERS.—Mr. Joseph H. Brown, the Ex-President of Rhode Island Horticultural Society, recently addressed the Massachusetts Horticultural Society, on Roses, and gave the following suggestions about them as cut flowers:

"The arrangement of cut roses is a matter of taste, in regard to which there does not exist a unanimity of sentiment, else we should be wearied with a continual sameness. But there are certain

fixed laws that regulate the decorative art in flowers. Too many blooms are used for single baskets and bouquets, where they are crowded together promiscuously, exhibiting a mass of petals, the form and color of each separate flower being indistinct, with little of its own foliage to render the proper effect. The more nearly roses are shown as they naturally grow, the handsomer they are. The stiff artificial stem, without the leaf of the flower, propped up by smilax, ferns, and other green things than its own, is not like Nature. Hand bouquets of roses and buds are more beautiful when made of one variety with its own foliage, stems long and loosely bunched, having a small number, well chosen, of sweet odor. A collection in basket form or for parlor decoration had better lack a flower than have one too many, the object being to form a graceful, refreshing and suggestive picture, preserving an 'easy negligence mixed with art.' Show each bloom separately, reposing in its own green, and a few colors have a better effect than many. If a combination is thought to be desirable, red, white and buff form a pleasing one. The beauty of roses is much enhanced when displayed in masses. As a rule, if there are to be many flowers, use the delicate shades; if few, the deeper tones. Large and choice roses are always more effective when displayed in proper standards for their reception as single specimens."

CLEMATISES AS POT PLANTS.—Though perfectly hardy, these are often grown as pot plants, and are special features at some of the Horticultural Exhibitions in the old world.

EXPENSIVE ORCHIDS.—Orchids are very expensive, because they cannot be readily propagated so as to give good plants in a reasonable time. They are, therefore, mostly imported from their native haunts. It has been discovered that one choice kind, Phalænopsis, may be increased by root cuttings. How far this may be the case with others depends on experiment.

A LARGE CHRYSANTHEMUM, a French variety, Mademoiselle—well, let us say Miss—Cabrol, is represented as being between nine and ten inches across.

THE CAMELLIA.—At one time the camellia was the leading plant for furnishing cut flowers. The introduction of forced roses, carnations, &c., completely dethroned it. It was sent further to the rear than it deserved. It is now advancing again, and florists tell us there is considerable demand for camellia flowers.

THE ROSE-LEAF FUNGUS.—Under this name, an alarming trouble is exciting the rose growers of the old world. It is said to be "epidemic" in Germany. It is described as a species of Asteroma; but the description of its terrible effects indicates a very close relationship to the one formerly described by Mr. Wm. Trelease as playing havoc with American roses.

TOADS IN GREENHOUSES.—Those troubled with wood-lice in greenhouses may obtain immunity by introducing a few toads. They are very useful creatures.

UTILIZING THE TRUNKS OF TREE FERNS.—Some tree ferns were sent from Australia to the Centennial, but arrived dead. These trunks are still in the fern house, but have other kinds growing out from the trunk. It seems like adding indefinitely to the species of tree ferns.

A FINE CHRYSANTHEMUM.—Mr. Wm. Barr, of Orange, New Jersey, tells the *Garden:* "My gardener, Mr. John Farrell, has been successful this year in growing some of the finest standard Chrysanthemums ever shown in this country. He exhibited eight to the New York Horticultural Society, ranging in height from 7 feet to 8 feet 6 inches. We had one, Elaine, which was 9 feet 6 inches, but that was unfortunately broken by a severe wind storm.

DISEASES OF ROSES.—One would suppose that of all plants the least liable to diseases would be the dear old rose, which has maintained a popular standing for some three thousand years. But the French journals are full of accounts of all sorts of "maladies" that bother the queen of flowers when she is trying to look her best and prettiest. The "Nielle" (mildew) seeming to be the most pestiferous of all these "mal-seant" things.

EARLY FLOWERING AZALEAS.—*L' Horticulture Belge* says that Azaleas Sigismund Rucker and Wilson Sanders, will bloom easily in September.

NEW OR RARE PLANTS.

DOUBLE BOUVARDIAS.—The double Bouvardias, raised by Nanz & Neuner, are having a remarkable run of popularity all over Europe.

BEGONIA HYBRIDA GIGANTEA.—Under this name Heineman offers a new begonia that has the male flowers six inches across! An Italian paper says one might take the flower for a huge pansy.

COLEUS, NONSUCH.—Coleuses change very much from what they were under glass when they get into the open ground. The raiser of this one claims that it holds its own through all treatment.

The specimen sent us is very pretty. The leaves are mottled with pink, crimson, yellow and white, edged with green and deeply serrated.

ROSE, MERVAILLE DE LYON.—This is a sport from Baroness Rothschild, and is precisely like it in all respects, except the petals are white as snow. It was noted first by Mons. Pernet, of Lyons, in 1879, and sent out in 1882.

and trouble he will deserve well of the floral world.

DIEFFENBACHIA REGINA.—A very distinct and striking addition to the Araceous family, introduced from South America. It has oblong elliptic leaves, which are rounded at the base, shortly acuminate, and almost wholly covered with greenish white, mottled with blotches of pale green, and having a narrow margin, and a few streaky markings of a deeper shade. The greater portion of the upper surface of the leaf-blade, whose two sides are nearly equal in breadth, being of this pallid hue, with the few but distinct dark markings, the plant is very effective and well entitled to be regarded as the Queen of the Dieffenbachias. This beautiful plant has frequently been shown in Mr. W. B.'s winning collections of new plants at an exhibition in London recently.

Dieffenbachia regina.

A DWARF STEPHANOTIS.—Among the sweetest and best things for cut flowers is Stephanotis floribunda. It beats orange blossom in fragrance, and will keep for a week without fading. The flowers bring enormous prices in Covent Garden market; still it does not pay. It takes too much room and comes in rather late in spring. A new dwarf and earlier kind has now been introduced called the Elvaston variety. If one can tell how to keep it clear of mealy bugs without much labor

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Those who have small gardens and love to grow their own fruits and vegetables, have little idea how great is the advantage in having deep soil to grow them in. Not only can one get double the crop from the same ground, but the quality is vastly superior to that of vegetables raised in shallow ground. The old-time gardeners—the men of the spade and the digging fork—understood this matter thoroughly, and a good part of leisure time in winter was spent in trenching ground, as they termed it. To do this a trench would be opened about three feet wide and two deep, the earth taken out being wheeled to the end of the plot to be trenched so as to be on hand to fill in the last trench. The top soil—the upper spit or spade-full would be thrown off entirely, and the lower spit being simply dug up and suffered to remain the lower spit. The next trench of three feet wide would then be attacked, the surface spit being thrown on the lower spit of the first trench, the lower being loosened as before. In this way the ground would be loosened two feet deep without burying the surface soil. In former times this was hard work, because done wholly by the spade. Since the introduction of the digging-fork it is much easier, and double the work can be done in the same time. But the competition of the plow and plenty of manure has so cheapened vegetables that few care to put this labor on ground—but those who want something extra nice and love to see everything growing beautifully, no matter how dry the summer season may be, will find much delight in a small piece of thoroughly deepened ground. This is the season to watch the effect of deep and shallow garden soil, and the lessons learned can be put into practice when the proper time arrives. Some things especially do so remarkably in deep soils, that one will hardly recognize them as the same plants.

Beans produce an enormous crop in deeply trenched soils, and are improved as much as any crop by surface manuring. We hope this method of fertilizing the soil will be extensively adopted for garden crops this season. Those who have not yet tried it will be surprised at the economy and beneficial results of the practice.

Peas for a fall crop may be sown. It is, however, useless to try them unless in a deeply trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England where the atmosphere is so much more humid than ours, they nevertheless have great difficulty in getting fall peas to go through free from mildew; and to obviate these drying and mildew-producing influences, they often plant them in deep trenches, made as for celery, and then are much more successful with them.

Besides the lessons we may draw from watching deep and shallow soils, there will be much profit in the study of manures, and especially in the culture of fruit trees.

The hints given in our flower garden department on pruning may be read with profit here also.

COMMUNICATIONS.

PRUNING AND CARE OF ORCHARDS.

BY ERNEST WALKER.

The old proverb, "Prune when your knife is sharp," has often been repeated, but if we follow it we are some time sure to cut too deep.

Winter is commonly recommended, but needs some modification. If large limbs are removed at this season, water penetrates the wounds, and freezing ruptures the tissue exposed, dying, decaying, resulting in large wounds—ulcers that never heal, sapping insidiously the vitality of the tree. Cut the limb at a time when the wound will heal, by what doctors call "the first intention." This is just before the buds swell and active growth begins in spring. But heavy pruning should be avoided—prevention is better than cure. Train the tree up in the way it should go, or grow, as well as the child, from the beginning.

The business of the fruit-grower should also be fruit-culturist. His business is not merely to gather the fruits and profits of the orchard, but to care for and cultivate it first. Water seeks its level. All forces naturally meet on equilibrium; when water rises above its level, it is only kept there by force or tension.

Man, flowers and fruits in their present degree of perfection have been elevated through cultivation; exhibiting a constant tendency to revert to their former state—they are only kept above that level by continued effort—cultivation, the power that raised them above it.

If the orchardist would eat wild fruit, let him go there to gather; neglect his orchard, and he may also gather there. All reward is earned. "As a man soweth so shall he reap."

Design is a principle of creation manifest in all God's works—the potter shapes the clay while soft to suit his design—the orchardist should also heed the principle. The care of the orchard begins with the purchase of the trees—then is the time to shape the tree—the orchard—cultivating it, remembering profit's reward is for those who toil. Mines yield their golden ore only to those who dig, and according to your dues, so shall come the reward. *Greencastle, Ind.*

THE COMET PEAR.

BY WILLIAM PARRY.

This pear, referred to in the May number of GARDENERS' MONTHLY, was introduced as a new pear, which it is not, but is a very old variety, believed to be more than 100 years old. The original tree is still standing on the estate formerly belonging to John Lawson the elder, descended to his children and grandchildren, who now own and occupy the premises, have several orchards in bearing, and have marketed 150 crates of pears a season, and to whose generosity the person who applied the name of Comet to this pear is indebted for grafts.

When we purchased the exclusive privilege of propagating and selling them to others, being the first sale ever made of this variety, a clause was inserted in the contract that it should be "under the true name of Lawson pear." So that if our firm is the one alluded to as distributing the pear "as the Lawson," we reply that we are under obligations to do so. Those were the terms of our purchase. We have no right to do otherwise. It was agreed in the contract in writing, signed by all the parties, that it should be propagated and distributed as the Lawson pear. The children and grandchildren of said John Lawson the elder were not willing that the name of their revered father and grandfather, who had purchased the premises (their old homestead) on which the original tree was then in full bearing, more than fifty years ago, should now be discarded by a propagator and a new name given, and sold as a new variety. We enclose a copy of our contract, and will send a similar one, with the history of the original tree, to all persons who apply for it.

Parry P. O., New Jersey.

[The object of our note was chiefly to note that there were two names given to the same pear by different firms; and the public had a right to know this, in order to be kept from buying the same tree twice over. As to the right of the question, there can be no question that the owners of the original tree have the right to name it. They say its name is Lawson, and Lawson it must be.—Ed. G. M.]

OLD APPLE TREES.

BY G. ONDERDONK.

When I was a young man I was at school at Albany, in the State of New York. I there learned of the existence of an "Indian orchard," about twenty-five miles or so from the city—somewhere back of the little town on the Hudson now called Baltimore, I believe. I visited the spot to see the curiosity. The trees were scattered about promiscuously in a small creek flat or bottom. They bore the appearance of great age—had a few scattering samples of rather common fruit. They reminded me of pictures which I have seen of "old olive trees near Jerusalem." In 1874 I again saw those old apple trees. They then looked to me exactly like the old live oaks so common in Southern Texas, where I have lived for the last thirty-five years. In fact, quite all of the new-comers from New York mistake our live oaks for apple trees.

Now, about the age of those apple trees. The oldest men of that region said that the trees then (1848) looked to them just as they did when they (the men) were boys. The traditions of the region say that these trees were there when the white men settled there. The region is one where the population has changed but little, being largely occupied by descendants of the original settlers—so that the tradition concerning their antiquity is likely to be correct. I first saw them in 1848. In 1874 they still had, to me, about the same appearance that of twenty-six years before; and I presume that if some Vandal has not destroyed them, they yet may have about the same appearance. I have not the historical data by me, but must not these trees be nearly three hundred years old? *Mission Valley, Texas, March, 1885.*

[It is understood that the apple trees of these Indians came from seeds given them by the French Jesuits, Juneau and others. It would be very interesting to know further about them. Probably Mr. Francis Parkman, or Mr. Conover, of Geneva, who have made these subjects special studies, could add something of interest to the little as yet known.—Ed. G. M.]

EDITORIAL NOTES.

MULCHING.—In an address in January, before the Massachusetts Horticultural Society, Col. Wilson discussed against the supposed advantages of mulching. Some of his reasons will hardly be concurred in by those who have had experience, or given thought to the subject. But one suggestion at least is worthy further thought, and that is, the encouragement which mulching gives to parasitic fungi. Those who have had occasion to use mulch know how "fousty" the surface of the ground becomes, and it has been placed on record in our pages, that a mulch of dry leaves has generated fungus that has afterwards seized on and eaten off the stems of Rhododendrons.

FORCING FRUITS IN AMERICA.—The ease with which good fruit may be had from the distant ends of our great country by rail or steamboat at any season of the year, has been much against the artificial production of the more tropical kinds. But the superior excellence of fruit carefully raised under glass, finds appreciation in some quarters. Messrs. Christie & Findlay, of Newport, Rhode Island, find it a very profitable investment.

INJURY TO FRUIT CROPS BY BIRDS.—Sparrows eat fruit buds in the spring, when the poor creatures are on the verge of starvation. In California the linnet does the same. Mr. Potter, of Centralia, is about abandoning an orchard of apricots seven years planted. In that time he has not had one fruit, the birds taking all the buds.

THE BEE NUISANCE.—A movement on the part of fruit growers against the enormous destruction caused by bees on fruits is on foot in California, as we judge by the following from a California paper. Bees can be easily trapped by sweet liquids under inverted glasses, and it seems to us the better plan would be to destroy the bees than to go to law. But this is the case as reported:

"A complaint has been filed in the Superior Court of San Diego county, in which the plaintiff recites the expense he has been under to improve his land, and states that he is engaged in the business of fruit growing; that among other fruits and vines he has about 30 acres of Muscat grapes raised for the express purpose of being made into raisins; that in order to accomplish this object it is necessary that the grapes be taken from the vine and exposed to the sun and air for about one month in order to cure and dry for the market. He alleges that defendant resides near Viejas, about 30 miles from plaintiff's premises, and is engaged in the business of keeping bees; that he does now and has for two years continuously kept upon a piece of Government land (embraced in the railroad grant) a part of section 23 and about three-quarters of a mile from plaintiff's premises, several hundred stands of bees. He further alleges that defendant has no interest in the land, but wilfully and maliciously keeps the bees thereon for the purpose of letting them eat up and destroy the fruits of the labor of citizens living in that vicinity, and are a great nuisance; that during the two years past the bees of defendant have destroyed and eaten up large quantities of the fruit to the value of $1,000, and are still engaged in eating up and destroying plaintiff's said property; that during said time defendant has known of the depredations, and has often been requested to abate said nuisance, but has and still refuses to do so. Plaintiff alleges it is his belief that the bees are wilfully and maliciously maintained at their present location, intending to damage and destroy his property in order to compel him to pay defendant a large sum of money to have them moved. The prayer of the plaintiff is that he may have judgment and decree of the Court that the keeping of said bees is a nuisance and that it be abated, and that he may recover from defendant, as damages for injury done, the sum of $1,000.

CATCHING COTTON MOTHS.—The late W. L. Schaffer, President of the Pennsylvania Horticultural Society, had an orchard measurably free from injury by the work of the codlin moth, and which immunity was purchased by a persistent use of sweetened liquid by which thousands were annually caught. A correspondent of *Vick's Monthly* for May has also had a similar successful experience:

"The place selected to hang the basins should be open and easy of access. No more liquid should be prepared than is needed for immediate use, for if kept long it will lose its ripe apple or new cider smell and taste. For thirty or thirty-five basins take a gallon of rain water and sweeten it, and then add a little vinegar to give it aroma, for it is the ripe apple or cider smell that attracts the moths to their liquid graves. I think Sorghum molasses is best for sweetening. The time for commencing the use of the bath will depend on the season, somewhere from first to fifteenth of May, and it should be continued until July, when the first brood of moths will have been captured."

BEES AND FRUIT.—The fruit growers of Fresno, California, are determined to clean out all the bee-raisers from that section, on account of the enormous destruction to ripening fruit.

THE ENGLISH SPARROW.—The English fruit growers are loud in their denunciation of this pest. Miss Ormerod, a well-known entomologist, has sent $10 to a society established for their destruction.

EARLY FRUITS AND VEGETABLES.—February 21st was the earliest period at which strawberries, tomatoes and cucumbers from the South, made their appearance in the New York markets. Those who would force these articles in the North for market, will do well to remember the date.

PAPER BAGS FOR GRAPES.—The use of paper bags in grape culture is one of the great advances in the modern art of gardening. It was among the earliest teachings of the GARDENERS' MONTHLY, that the practice at that time popular, of taking off the leaves of the grape in order to let in the sun and air, in order to color and ripen them, was done under a mistaken idea that the coloring and ripening of fruit was a purely chemical process, whereas ripening is a purely vital process, and to get the best results we need all the help we can get from the living plant, and not so much from the sun and air, except in so much as these may help the vital powers of the plant itself. Good healthy leaves are the first essential to vital powers. The more healthy leaves the better. Pulling off vine leaves to let in the sun and air is an injury to vital power. With injury to vital power grapes will not color well. The more healthy leaves a plant has the better the fruit will color, and it makes no difference whatever whether the fruit is in the sun or shade, provided there are plenty of good healthy leaves to feed the vital forces on which the coloring power depends. That shading will not act against high coloring has long been known to every hot-house grower. Shading the house in very warm and sunny weather, has been found favorable to high coloring, because the excessive light and heat was unfavorable to the vital power.

From this to shading the bunches by means of paper bags is an easy step. We have not heard that the practice has come into general favor in the North or East of our country, because the summer heat or light is not unfavorable to vital power; but further South, where the fruits natural to the more temperate climes have a hard struggle with that sun which enervates human beings as well as plant life, bagging has been found of great value and in some instances is practiced on a large scale. Mr. Coenen, a famous German vineyardist in Hopkins County, Ky., had last year no less than 80,000 pounds of grapes under paper bags, employing six girls, and using 34,000 bags in the work. It pays him well, as his product is considered a first-class article. Then there is the great advantage of full protection in those localities where bees are destructive to the fruit. It is possible that some form of fungus diseases may be prevented also.

TEWKESBURY WINTER BLUSH APPLE.—One of the features of the Horticultural meeting at Lancaster was the universal praise given to this variety. It was regarded as one of the most profitable grown, as it is certainly one of the best, if not the very best desert apple. The most remarkable fact in its history is, that it has no star for Pennsylvania in the American Pomological Society's catalogue, though its native State, New Jersey, has taken care of it. It seems to be grown everywhere in the Southeastern part of the State, and its absence from Pennsylvania honors in the catalogue can only be from no Pennsylvanian being on hand to ask for a star when it has been under discussion.

THE CUT-LEAVED ENGLISH BLACKBERRY.—This—as the Evergreen blackberry and the Sandwich Island blackberry—had just about started on a "booming" career, when another names it "Nevada" blackberry, and will no doubt get a share of the enormous prices which the ignorant always pay for a new name to an old thing. It is fair to say that the old cut-leaved blackberry here introduced as something new is by no means a worthless thing, and we have often wondered that it was not more popular.

THE WONDERFUL STRAWBERRY.—Some years ago we gave an illustration of "The Wonderful" strawberry. As it is more than probable that this wonderful strawberry has gone the way of so many wonderful seedlings, no one will probably be confused by having another one introduced to them under the same name. This variety is an Ohio production, and like its former namesake, is regarded as wonderfully productive. It does not ripen all at once, but in succession from early till late. It is a pistillate, and those who think there is no character in a pistillate, except such as may be given for the occasion by the pollen, may be interested in knowing that it is a seedling of Wilson by Kentucky pollen.

SCRAPS AND QUERIES.

FORCING STRAWBERRIES.—Mr. Thos. Foulds, Hoyt, Montgomery Co., Pa., writes: "Will any of your correspondents give their experience on strawberry culture under glass?"

"This query was asked in one of the previous numbers of the MONTHLY, and I for one feel very much interested on the subject and would like to hear from others. No doubt there are those who have been successful. I have been only partially so; possibly improper facilities have retarded my success, the selection of variety, or the proper treatment has been wanting to develop and ripen the fruit satisfactorily.

"'To err is human;'
But ignorance is not bliss.

"This is my experience and the result: Last spring two hundred good strong runners of the Sharpless variety were potted into two and a half-inch pots and plunged in open frames; about the middle of July they had filled the pots with roots, and were shifted into four-inch. In November they were placed on a bench in the greenhouse three feet from the glass. January they began to blossom and,—here lies the rub. I supposed it necessary to fertilize, and in the absence of bees I substituted them by using every morning a portion of a leaf or stem which is covered on the underside with hairy filaments and distributed the pollen in that way. This I continued until fruit began to set and I thought my achievement complete. But let me ask, how was it that those flowers which opened after I ceased my fertilizing, set their fruit also?

"By the middle of February a few had swollen to charming proportions, their modest blush had begun to glow and invite a luscious repast. But, alas! The fairest were seized with mildew and the disease was most disastrous. I attributed that to the dark, dull days of February, and when the bright days did come, another calamity—which never comes singly—they were seized by red spider, then thrown out in disgust to freeze.

"The result was about two boxes of fair sized, ripe berries, green ones in abundance, which never ripened, or became diseased. Yet, I have not lost hope, but will try again. Would be pleased to hear from some one interested."

FORESTRY.

COMMUNICATIONS.

NOTES ON REMARKABLE TREES.

BY DR. C. W. GREENE.

A writer in the GARDENERS' MONTHLY for May says that the Baobab does not get its growth in less than 800 years. But J. D. Hooker says "it is a very fast growing and short-lived tree." Your correspondent also speaks of the size of the great Dragon tree of Teneriffe, "as it is now." As long ago as 1872 the newspapers reported that famous tree as having fallen.

A late number of the *Century* (April, 1885, p. 838) speaks of a tree trunk in Washington Territory, formed by the union of a fir and a cedar.

In my boyhood I knew of a great oak tree which had a large branch that returned to its parent trunk and was blended with it. I suspect that it was an artificial arrangement, for the tree stood near an old house. *May, 1885.*

[Two trees of different species, starting into life in close position will in time appear united, by the trunk of the stronger enfolding the weaker. It grows around the slower grower. It is not a case of grafting, as we understand it. If by any means the roots of the weaker were severed, the tree would probably die, as it would also probably when wholly enclosed, so that there was no room for the expansion of its own woody circles. Such is the belief of those who have made physiology a close study. It is not thought one tree draws any support from the other. It might get some moisture. —Ed. G. M.]

EDITORIAL NOTES.

PROFITS OF FORESTRY.—We contend that when once we can show that a man may make more profit from planting a hundred acres with trees than with corn or other farm crops, Forestry in America will not need advocates. For this reason we are always on the lookout for forestry figures for our readers.

In the recent (10th) report of the Ontario College,

there is a long report on Forestry in the Dominion. But as the greater part is devoted to showing the "influence on climate" while we are looking after the influence on one's bank account, we will let that go. The last page is devoted to "estimated" profits on 100 acres of forest planting in Canada. No one has planted 100 acres but this estimate is given to induce some one to do so.

The writer believes some profit can be had from trimmings at 15 years old, and so on till 50 years, when the gross revenue from the 100 acres is to be $80,000. The cost of trees and planting he puts at $32 per acre; and places the cost of care and expenses for the first 15 years at about $36 per acre. He puts the whole cash expenditure at $20,000 and the "clear revenue" therefore, at the end of 50 years, $60,000.

Now this is no great showing, only $12 per acre a year. In his statement there is nothing allowed for the original cost of the ground. It is surely worth something. If one has a tract of land for fifty years, and has it in condition for agricultural uses as this is required to be before the planting of the forest, the annual rental of the land per acre would probably be much above $12 an acre. Certainly we may set it down that the average rental of the land for that period would be that. There would be this income without any crop at all, the tenant making his living. $25 per year at least should be the average product of land of this kind. Unless some better showing than this can be made for forest planting, we fear no new forests would be put out. The trouble is that American writers on forestry take their figures from European and especially Scotch works. None of these experiences are of any use in our country, and even there it has been shown by actual experience, that none of their forest plantings have been profitable. They all keep an eye on the profits from "thinnings," forgetting that this fills the forest with dead brush inviting forest fires, and sprouts from the "thinned" trees leaving the remaining living ones to struggle with the sprouting enemy. If a practical common sense American or one with American experience had to run a forest, he would double these profits in the time given.

AN APRIL FOREST FIRE.—The dead brush left from former thinnings, and allowed to rot and dry in the New Jersey forests, caught fire in April this year and hundreds of acres and thousands of dollars of valuable property were destroyed. And yet people are asking "how to preserve our forests?" In former times when a man died from apoplexy, heart disease, or any other sudden affliction, the verdict of the twelve men, honest and true, would be "died from the visitation of God." The modern verdict on these forest fires might be "fired by the hand of Providence," for all the steps the community takes to perceive and prevent the real cause, namely, the scandalous prevalence of dead underbrush.

SCRAPS AND QUERIES.

SILK CULTURE.—"J. S. J.," Earlham, Madison Co., Iowa, writes: "Will you be so kind as to tell where I can get full descriptions about silk worms, and silk culture?"

[Address Woman's Silk Culture Association, of Philadelphia. That Society issues a free circular. —Ed. G. M.]

THE TULIP TREE IN FLORIDA.—Mr. Thos. Roberts, Green Cove Springs, Florida, says: "In order to demonstrate the inaccuracy of your correspondent in the GARDENERS' MONTHLY of February, as to the 'Liriodendron tulipifera' not growing here, I mail you with this a small twig, having on it a fully opened flower. The tree is found here, quite plentifully, along the banks of our water-courses."

FOREST CULTURE.—"F.," Lincoln, Nebraska: "I am always particularly interested in the forestry column of the GARDENERS' MONTHLY, and note that you lay stress on the difference between American forest culture, and that recommended in English works. I am inclined to venture largely on Forest culture. In what respect do you consider English practice defective?"

[Chiefly in their oversight that time is money. If we can get a tree in twenty-five years as large as by some other plan it would take fifty years to grow, it is a big saving. The European forester would plant trees, say six feet apart, and in two or three years the whole becomes a struggling mass of vegetation. To correct this he cuts out every other one for hoop poles, the proceeds in that land of cheap labor yielding a profit. In a few years he thins again, the produce being sold for hoop poles or something of that sort; and so he keeps on thinning, till when the trees are fifty years old he has timber to cut. All the guess-work figures in the English forestry works show large profits by this method, but the actual figures from those who have tried, show large losses. We have to remember that the trees thinned out are not grubbed out, but cut down, and so sprout up and form underbrush. All this growing vegetation takes food, and is so much subtracted from the trees left for permanent timber. The trees set out as we would set an orchard, and kept as we would an orchard, would have been as large in twenty-five years, as they are in fifty under this old-country method. Aside from all this, the dead brush left from the trimmings is a continuous source of danger from fire, and never ought to be permitted by law in a dry, warm climate like ours.

For our country a forester should set out about 200 trees to the acre; crop for two or three years in some good desirable farm product, until the trees had grown so as to claim all the ground for themselves, then let them have it, or graze if desirable, when the trunks are strong enough to take care of the tree.

In a general way this is our idea of good American forestry practice, though, of course, allowance must be made for the want of clearness which a brief paragraph like this necessitates.—Ed. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

THE ATAMASCO; OR, FAIRY LILY.

BY R. THOMSON, JR.

Amaryllis Treatæ, or Fairy Lily, are they not Atamasco Lilies, botanically introduced since 1822? In Peter Henderson's "Hand-book of Plants," page 256, under Zephyranthus, we see this: "Zephyranthus, the west wind, and anthos, a flower, Linn. Hexandria, Monogynia. Nat. Ord., Amaryllidaceœ. One of the best species is Z. Atamasco, generally known as Amaryllis Atamasco, and in our cottage gardens as Fairy Lily. This species has beautiful pink flowers, which are produced in great abundance during the entire summer—native of Southern and Southwestern States. Z. candida, a species with small rush-like leaves, white flowers—native to Lima and Buenos Ayres, introduced in 1822." I give this extract almost complete, from the fact that I am the collector of a bulb native here, which from comparison with bulbs bought of a dealer, advertised as A. Treatæ (and submitted to him for inspection), I was induced to call those I collect A. Treatæ also, and to offer to the trade as such, honestly believing I was correct in my name, but have been laughed at by learned botanists for calling it A. T., when it has been introduced as long ago as 1822 as Amaryllis Atamasco. The name A. Treatæ, as I understand, was given in honor of a Mrs. Treat, who collected it in one of its native haunts (Florida) where it has been growing for hundreds of years, and sent it to a florist, who introduced this old Amaryllis under a new name to the notice of the trade, thereby giving to the public a bulb well worthy a place in every collection; but does his having named it A. Treatæ forever disbar any one from calling it by its old name, Atamasco, or justify criticism if they fall into the new name, and call it as he calls it, Fairy Lily, or Amaryllis Treatæ? I have been under misapprehension in having claimed this same dealer as the endorser of this bulb as true to name, from having sold him a few thousands each season as A. Treatæ, and though I thought he was not the person who first told me I was in error; but the well-known Editor of the GARDENERS' MONTHLY kindly, in one of his letters to me, said: "Are you sure the bulbs you offer for sale are the true A. T.? Are they not most likely Amaryllis Atamasco?" This remark startled me somewhat, for I relish not the idea of sailing under false colors; and as a safe avenue of information I beg of the learned botanists of the United States to resolve this question of all mystery, and let the floral world know if there is a difference in A. Treatæ, introduced five years ago, or Amaryllis Atamasco, introduced since 1822, now 63 years ago.

I want enlightenment upon the subject, as I have hundreds of thousands of these bulbs collected for sale, and have no desire to sell under a false name. The Amyarillis I have—has bulbs ordinarily of the size of a filbert, rather flattish than oblong, and white lily-shaped flowers, and the kind Editor tells me the difference lies between the two varieties in the individual petals and flowers of Atamasco, being larger and broader than A. Treatæ. Now, would

not the difference in soil and climate most likely produce this result or difference? These grown here are found in a stiff clay subsoil, overlaid by stiff, sticky black soil, whilst those obtained in lower South Carolina in sandy soil (much like that of Florida) are smaller both in bulb and flower. I do not agree with those that claim for this bulb any difference at all. Like the Crispa clematis offered this season as a novelty by several florists, it may be new to most, but it is claimed by Josiah Salter that it has been known since 1569—a native of North America and of the Viticella type; page 131, May number GARDENERS' MONTHLY. Also Canna Ehemanni. Curtis in his Botanical Magazine, number 1968 in 1823, gives the first illustration of it, and both are now claimed as novelties. What are novelties anyhow? I thought entire new plants raised from hybridizing, cross fertilization, seedlings from old plants, &c., not old, but well-known but forgotten varieties introduced under a new name, such as I believe is A. Treatæ so-called now.

[The Amaryllis Treatiæ must on no account be confounded with the Atamasco lily. It has been decided by such high authority as Prof. Sargent and Mr. Sereno Watson, to be an entirely distinct species; and was named by them, and not by any florist in honor of the discover, Mrs. Mary Treat, of Vineland, New Jersey, herself an excellent botanist, and one well able to tell the difference between the two. In the letter of the Editor, referred to by our correspondent, the reference to the flower was but an off-hand remark. We give the exact description of both from Chapman's new edition of the "Flora of the Southern States:"

Amaryllis Atamasco (of Linnæus).—Scape terete, somewhat lateral; one-flowered; leaves linear, concave, fleshy; spathe, one-leaved, two-cleft; perianth short, bell-shaped, white tinged with purple; style longer than the stamens; seeds angled. March and April. Scape 6 to 12 inches high, commonly shorter than the glossy leaves. Flower 2 to 3 inches long.

Amaryllis Treatiæ (Watson). — Bulb small; leaves very narrow, only a line and a half wide, semi-terete with rounded margins, not shining; scape four to twelve inches high; flowers three inches long; its peduncle three to nine lines long. April and May.

The plants are most readily distinguished by the florist, in the rush-like leaves of Mrs. Treat's Fairy Lily. This species we believe has only been found in Florida. In beauty we think the old Atamasco the prettier.—Ed. G. M.]

CYPRIPEDIUM INSIGNE.

BY E. N.

I see by an article in the April number of the GARDENERS' MONTHLY that you mention about Cypripedium insigne having two flowers on a spike. I wish to say I find that a common occurrence. We had several that way here in Mr. De Witt Smith's garden at Lee. We never took much notice of them, as I always put it down to the plants being in good condition. Some of our plants are three feet through, and have from 80 to 100 blooms each flower, and being 5½ to 6 inches across. I think if some gardeners knew the true value of old C. insigne we should hear a great deal more of spikes having two flowers on them. How often do we see plants of that orchid look as if they wanted to die, the leaves all dried up, and with two or three flowers only on the plant; and as soon as they are cut the plants are thrown out of sight. I myself consider that insigne is one of the best old friends we have, and they ought not to be forgotten for the sake of new.

Lee, Mass.

[It is very interesting to know that this peculiarity occurs so often, and the person who first gives a true explanation of the cause, will render a great service to science. The supposition that the "plants are in good condition" does not explain the process by which the change comes. Thousands of plants in good condition never exhibit the peculiarity. There must be something else in addition, and, if this "something else" should be always present,—always producing this effect, we should have a new species.—Ed. G. M.]

EDITORIAL NOTES.

HOW TO PRODUCE VARIEGATION.—Just what induces a plant to become variegated is still a mystery. Mr. Rupp, the famous improver of the Chinese Primrose, tried in vain everything he could think of to produce variegation in the leaves At length, noting a variegated plant of the common clover in the fields, the thought struck him that possibly there might be some condition of the soil which induced it. He took the soil about this clover plant, put some in a pot with a seedling primrose, and got his long desired variegation. "One swallow does not make a summer." Perhaps so, but it is worth looking out for more when we see one.

BOTANIC GARDEN IN MONTREAL.—The people of Montreal are moving with great prospects of success for establishing a botanic garden in that city. It is a pity Philadelphia does not move in the same direction. The Park Commissioners would no doubt do for some society with this object in view what they have done for the Zoological Society—cheerfully give them all the ground necessary for the purpose.

EFFECT OF FROST ON ORANGE TREES IN FLORIDA.—A correspondent of the *San Francisco Chronicle*, says: "I have traveled away from my theme, which was in the beginning the cold wave. Some friends, with myself, were talking about it to a gentleman, long a resident of the State, and its effect upon young orange trees. Some rather remarkable incidents bearing upon this subject were related. Among other things, he stated that it was not the cold or the frost by which the trees were killed, but the heat of the sun closely following it. 'If,' said he, 'any one will take the pains to get up before sunrise and make an incision in every tree, two or three inches long, with a sharp knife, there will be no danger of harm from the heaviest frosts. I had a neighbor, who, going through his grove before sunrise, found his young trees all killed, as he supposed. In a sort of rage he took out his knife and scored the bark of about a dozen or two, to make the destruction sure, but in a few days—lo! and behold!—those he had cut came out in renewed life and beauty and were the most vigorous trees in the grove. Acting upon this hint, he always afterward saved his choice trees by an application of the knife before the sun had a chance to get at them after a frost.' I give this for what it is worth, being assured of it as a fact. It is the newest thing out, and I leave it for gardeners and philosophers to give the reason why."

WILD CELERY SEED.—The wild celery seed of Chesapeake Bay, on which the ducks and geese feed, giving the flesh the delicious flavor so much prized by epicureans, is the curious water plant known as Vallisneria spiralis. This plant is among one of the wonders of vegetable life, and always entertains the studious. The leaves are long and grass-like, and the minute flowers have the sexes in separate flowers. At the time of flowering the thread-like flower stalks rise to the top of the water. The male flowers cast their pollen on the surface, and it floats along till caught by the female flowers. The male flowers die after shedding the pollen, but the little female with its embroyo seed vessel draws in the flower stalk as if it were a spiral spring, down to the base of the plant among the grassy leaves, where it remains till mature. It is rare for even the botanist to get to see a seed vessel, and, as one might suppose, one is only to be obtained at all under some difficulty.

One of the surprises to one of our large seedsmen recently was to receive an order for sixteen bushels of the seed!

TREE TOMATO OF JAMAICA.—This is the popular name of a fruit naturalized in Jamaica, and found in many old gardens of the Coffee districts of St. Andrews and Manchester. By the kindness of Sir Joseph Hooker it has been determined as Cyphomandra betacea, DC.,* a native of South America, including Peru and Chili, where also it is under cultivation. The plant (belonging to the natural order Solanaceæ) is of shrubby habit, about 5 or 6 feet high; the leaves are large (sometimes a foot long), broadly cordate, and softly pubescent, generally confined to the termination of the branches. The fragrant flowers appear as subaxillary cymes, of a pale fleshy color, with bright yellow stamens, followed by an obconical or ovate fruit, which at first of a greenish or purplish tint, gradually assumes a warm reddish color as it approaches maturity. The bilocular fruit is of firm texture, about 2 inches or 2½ long, and about 2 inches in diameter. The pericarp is about ¼ inch in thickness, of a pale color. It is not generally known, and seldom used in Jamaica, but it is without doubt a fruit that should be more largely cultivated, as it answers in every respect the purposes for which the ordinary Tomato is esteemed. On the mainland it is known as the Tomate de la Paz, here as the Tree Tomato. and sometimes, on account of its supposed beneficial action on the liver, as Vegetable Mercury. Plants are easily raised from seed, which come into bearing in about two years. It is a very prolific bearer, and the fruit is available during the winter months—November to March—when ordinary Tomatoes are not so easily obtained. If the fruit is allowed to fully ripen on the trees it may be eaten raw, and it has somewhat the flavor of Gooseberry. If the skin is removed and the fruit (without the seeds) stewed with sugar, it resembles Apricot, but with a slight sub-acid flavor which is very refreshing. In my own household it takes the place of Apple in Charlotte-aux-pommes, and it

* Pionandra betacea, Miers in "Hook. Lond. Journ. of Bot.," vol. 4, 1845, p. 358; Solanum betaceum, Cav. ic. 6, p. 15 n. 599, t. 524; "Ann. de Hist. Nat.," i. p. 44, "Dun. Sol.," 169, n. 70, syn. 7, n. 16; Andrews, "Botan. Rep.," t. 511 Solanum, crassifolium, Ortega, Dec. 9, p. 117; Solanum obliquum, Bertero, pl. exs. n. 1125, in H. DC. nec. Ruiz et Pav.

is preferred in this form to real Apples, especially such as grow in the Blue Mountains, or are imported from America. I notice the plant is under cultivation in the South of Europe, but I am not aware to what uses the fruit is there applied. Sir Joseph Hooker informs me that it is now in fruit in the Temperate-house at the Royal Gardens, Kew. As I have lately distributed seed of this Tree Tomato to numerous correspondents at Madeira, India, Ceylon, Hong Kong, the Cape, and the Australian colonies, the above remarks will no doubt prove of interest to them, no less than to other readers of the *Gardeners' Chronicle*, who may desire to secure a hardy perennial Tomato plant of more than ordinary merit. I may add the plant flourishes in Jamaica at elevations of 2000—5000 feet; the mean annual temperature of these districts ranging from 72°—63° Fahr.—*D. Morris, Jamaica, March 25th.* [This fruit may occasionally be seen in Covent Garden Market under the erroneous name of Granadilla. It is we believe imported from the Azores.—Ed. *Gardeners' Chronicle.*]

[Some fruit from New Orleans has been sent to us by Mr. M. H. Lester. It is more like a small egg than a Tomato. It is about the size of an egg with the largest end attached to the calyx.—Ed. G. M.]

SEWAGE.—A London paper says that the sewage problem has yielded a new notion. Sir J. B. Lawes is of opinion that the most profitable way to dispose of sewage is to send it to the sea; its phosphates and other constituents being advantageous to the fisheries, and therefore as likely to come back to us in the shape of food as if spread upon the land, while the acceptance of the idea for practical purposes will make an end of all experiments for the agricultural employment of sewage. Any less capable person would find it difficult to obtain a hearing for the proposals that are based on the idea, but the public will gladly listen to one who has certainly mastered the theory of food production and the utilization of waste material. There is a direct gain, doubtless, to the subject in the fact that it will be regarded from a quite new point of view. We shall not only have to discover the weak points in the new proposals, but shall perhaps have to rummage amongst our own prejudices, to determine which are to be got rid of to make room for wiser counsels. Whether sound or unsound, practical or nonsensical, we are certainly put upon a new tack for fresh and unexpected exploration.

There is much in this of sound sense. Nature generally provides an antidote for every evil; and she does for polluted sewage. Philadelphia just now is worrying over the water problem. Much sewage naturally drains into the river, as it does into every river in the world that supplies a large city with water. The Water Department is superintended by a gentleman of admirable character, and superior scientific attainments, and he and the chemists are finding all sorts of terrible things in the water. There is not enough oxygen, and now it is too much albuminoid ammonia, and now too much free ammonia. To-day he would drive away all the population from the banks of the river by making it impossible for them to get rid of the sewage except by wells and sinks; to-morrow he would abolish all the pumps because the water wells get the sewage from the sinks. Another time he would have some thousands of dollars to dredge the mud from the bottom of the river, and again he would have some more thousands to "oxygenate" the water by artificial means. Then he worries them by telling them that there is just one more death in ten thousand than there is in London, which is considered the healthiest city in the world; so that the average duration of a man's life, supposed to be about 35 years, is shortened five hours by living in Philadelphia rather than in London. To remedy this in the manner he wants would require fifty or sixty millions of dollars. When a noted health reformer, Mrs. Isabella Hooker, was recently showing how much the modern comforts of life shortened life, and was taxed with inconsistency in not practicing what she preached, she retorted that she was willing to give a few years, for the sake of the comforts. And indeed long life is not the only blessing we desire. Most people would be willing to give a few hours of life rather than groan under a taxation that would require the proceeds of many hours of labor a week to pay. And it is unnecessary as Sir J. B. Lawes hints. A thick bed of aquatics in the bed of a river will "oxygenate" the water, and they will feed on all the Ammonia that a moderate amount of sewage yields. Fish will eat all the "albuminoid" material, and it will be pretty foul water that the two together will not clean. It makes no difference what goes into river water so that the worst gets out again before people drink it. If Philadelphia would keep its river stocked with fish, and encourage the water plants, and get a few large subsiding reservoirs to give time to settle the mud, the millions required by scientific superintendence might be spent on happy homes. The lesson may be useful to people grappling with the sewage question everywhere.

CLEMATIS FROM SOUTH AMERICA.—Mrs. J. S. R. Thomson, of Spartansburg, South Carolina, sends us a White Clematis flower which we thought to be one of the numerous varieties of Clematis crispa, but she describes it as having a tuberous root, and states that it is herbaceous, the stems dying wholly every year. It is probably some other species which only good specimens with leaves, flower and fruit would decide. She also sends some very nice bulbs of Amaryllis Treatæ, superior to those we have seen from Florida, where it was first discovered by Mrs. Treat, whose name it bears. It, and its neighbor Atamasco Lily, are well worthy of universal culture.

ECONOMIC USE OF WILD CHERRY KERNELS.—The *Gardeners' Chronicle* tells us "that in a report by Consul Biliotti on the trade and commerce of the district of Trebizond for the year 1883, it is stated that the kernel of a diminutive species of Wild Cherry, having an aromatic flavor, is known by the name of "Mahlep," and is little used in Turkey, but greatly so in Egypt, by bakers to sprinkle over bread. It is supposed to be a preservative against ague. The tree grows to a large size, especially in the vicinity of Niksar and Flérék, and also at Amassia and Tokat. The values of the kernels exported amounted to £1902 to Turkey, and £2238 to Egypt."

Although this is evidently not the variety of Cherry known to nurserymen as Mahaleb, it looks as if we may look here for the origin of the name at any rate.

A PLEA FOR THE ENGLISH SPARROW.—Some one who has a very tender spot in his heart has been writing to the *Gardeners' Magazine* a plea for the English Sparrow. Among other things he gets off the following:

"The love-call is certainly more of a chirp than a yelp, but it needs long and frequent observation to determine the varieties of sparrow language, as expressive of passion, alarm, or domestic felicity. In the early days of spring they will begin their courtship; then listen for the loud 'chirk, chirk,' and you may discover that it proceeds from the throat of a lusty cock in the full beauty of his wooing dress; the black on his head having the richness and depth of velvet, and his whole action as sleek and sprightly as becomes a gallant lover, rejoicing over the sober dame who is presently to become his bride. But, alas! the course of true love does not always run smooth. She may have cast a favorable glance upon another, or a bold rival may give the challenge to fight for the maiden's hand. Then the chirk ceases; a sharper note, more quickly repeated, and accompanied with fearful jerkings of the head and tail, impetuous hoppings from side to side, and a general displacement of those lately well-preened feathers, pronounce the quick approach of war. These love-battles are generally conducted on the principles of true chivalry. The rivals have it all to themselves; the conflict is short, sharp, and sanguinary, and the victor claims the subject of it for his bride. The war-note is sounded by both parties throughout the fight, until the moment of conquest arrives, when the defeated gallant gets out of the way as quickly as his buffeted wings will carry him; and the champion returns to his chirking ten times louder than before. 'None but the brave deserve the fair.'

"Scarcely a day passes, where the colony is of any extent, without one of these sanguinary conflicts; but as the season progresses, and all the swains have won their wives, there is no fair excuse for their continuance. And here I must admit, to the damage of my client's character, that he prefers to make excuses for mischief, rather than live in the prosaic enjoyment of continual peace. Not that green-eyed jealousy ever shows its face in a sparrow's home. No! the connubial tie is never broken by infidelity; no duels arise because of faithless spouses or truant lords. For the sake of the favor with which every description of heroism, however romantic, is received, I could almost wish it were so: but I must confess with sorrow that all the subsequent disturbances are not for love, nor for principle, nor for political triumph, but for meat! The song which Leigh Hunt gives to the fairies might, leaving out the suggestion of 'stolen kisses,' be just as well given to our neighbors for their own national melody:

'Stolen sweets are always sweeter;
Stolen kisses much completer;
Stolen looks are nice in chapels;
Stolen, stolen be your apples;
Truth the fruit were scarce worth peeling,
Were it not for stealing, stealing.'

"I must own that my client prefers ill-gotten to honest gain. When the liberal cook has strewn the yard with the débris of the bread-basket, and the pavement is spread like a groaning board with enough for all, there is sure to be more fighting than feeding; and the possessor of a pellet of bread will be pursued by an inveterate army of savage beaks and claws, all of which might have been better employed in helping themselves to the general bounty. But how different are these turmoils to the displays of true chivalry in early spring. Then the brave combatants met to utter mutual defiance, and fight it out. The battle was a test of bravery and power. Now it is a contemptible row, and nothing more; and Paddy's prescription for the enjoyment of Donnybrook is carried out to the full—'Wherever you see a head, hit it.' What a confusion of angry voices. What a yelping from the thick of the elder tree, the slope of the thatch, or the remote corner of the yard, where, as if by magic, half the company at least have got together in a scrimmage, and each

separate sparrow is engaged without meaning in fighting all the rest. Political economy is evidently not a leading subject of study in the university of sparrows. But who would not forget all this when nightfall comes again, and the evening song is repeated from every roof of the village, and from some two or three of the largest trees upon the green? It ought to give enjoyment even to the most critical of musical ears, for it is the expression of content."

THE PERFUME OF ROSES.—In Roses there are seventeen different sorts of scent. "Sweet Briar scent, as in the garden variety; Moss Rose scent, as in Common Moss and family; Austrian Briar scent, as in Copper Austrian and family; Musk Rose scent, as in Narcissus, old Musk and family; Myrrh scent, as in Ayrshire splendens; China Rose scent, an astringent refreshing scent, as in old Monthly China and many others; Damask perpetual scent, as in Rose du Roi, &c.; Scotch Rose scent, as in the early double Scotch; Violet scent, as in White Banksia; Old Cabbage scent, as in the well-known double Provence; Otto perpetual scent, as in Charles Lefebvre, Madame Knorr, &c.; true perpetual scent, as in Chabrilland, Pierre Notting, &c.; Old Tea scent, as in the old yellow Tea or Magnolia Rose, and others almost unpleasantly strong for some tastes; Sweet Tea scent, as in Goubalt, Maréchal Niel, &c.; Hybrid Tea scent, as in La France; Nectarine, or fruit scent, as in Socrates, Jaune Desprez, Aline Sisley, &c.; and the Verdier scent, represented more or less by all the Victor Verdier hybrids, such as Eugénie Verdier, Castellane, Countess of Oxford, Marie Finger, &c. The petals of the highly-scented varieties have on their inner surface minute perfume glands or vesicles, containing the highly volatile essence, under the microscope distinctly visible. Those on the petals of Sweet Briar and Moss are almost visible to the naked eye. Mr. Curtis concludes that the following are the most deliciously and powerfully-scented varieties: La France, Goubault, Devoniensis, Maréchal Niel, Bessie Johnson, Madame Knorr, Pierre Notting, and Charles Lefebvre."—*Rosarian.*

JAPANESE TEA.—Tea is one of the principal productions of Japan, and a large quantity of it is exported to the United States from the ports of Yokohama and Kobe. In Japan the use of Tea dates back to very early times, and at present it is more than ever a popular beverage. Whenever a guest presents himself at a person's house a cup of tea is at once offered him; the omission to do this is a breach of politeness. It revives the spirits, it allays the *ennui* incidental to old age, and promotes sociability. In most houses it is the leaf of the tea plant called Sencha that is used, and not the powdered leaf at all. Powdered tea, Matcha, is usually used only in the houses of nobles and of the rich. A ceremonious system of drinking tea has existed in Japan from very ancient times. A gathering of friends is held in a certain small room of fixed dimensions, in which ground or powdered tea is served to them. This room is called *sukiya*, and is generally detached from the dwelling-house. Outside and about the room curious and valuable stones and plants are arranged, and inside old tea utensils are displayed, also old scroll pictures and other paintings. At the time of a gathering various kinds of prepared dishes are placed on low stands before each guest. The host himself prepares Koicho (thick tea) in the presence of his guests, and offers a cup of it to all the guests (always five), to be taken in turn, after which *usucha* (weak tea) is handed to them. The great point about this tea-room is, not that it be gaudily decorated, but that it be neat and thoroughly clean.

The process of making tea for everyday use does not differ materially from that adopted in England, but in the matter of ceremonious tea-drinking it is necessary that great attention be paid to the selection and preservation of tea, the selection of the water, the arrangement of the utensils, observation of the temperature of the water, and care in the washing of the utensils.—*Gardeners' Chronicle.*

SCRAPS AND QUERIES.

LOCO WEED.—A Lincoln, Neb., correspondent says: "Inclosed I send you a plant which is said to remain green the year round. It is found on the prairie and has the reputation, when eaten by cattle and horses, of causing them to bloat or swell up and die. Whether it is really so I cannot say, but such is the report. I have not seen the flower. I suppose you will be able to identify it at once. If I can get a sufficient quantity of it, I think I will examine it for some alkaloid which it probably contains, and which is the cause of its fatality with cattle, that is, if report tells the truth."

[This is apparently the Astragalus mollissima of which Prof. Porter wrote. Our correspondent is a distinguished chemist and just the one to make the chemical analysis suggested.—Ed. G. M.]

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

BADLY SOLD.

BY JAMES Y. MURKLAND.

"What is it?" said Mr. Peter Henderson to the writer, a short time ago, as he tossed down a faded, yet still beautiful, rosy pink flower.

"A Brunsvigia, I guess," was the answer; but noticing a dangerous glimmer in the veteran's eye, we hastened to make a closer examination. Throwing back the petals, the anthers and stigma of a lily were revealed.

"A Lilium; by Jove! Longiflorum, too, at that. Where on earth did you get it?"

"Yes, sir, a Lilium: Lilium Harrisii, raised in Bermuda. What do you think such a lily would be worth?"

"Well, of course it never would be in great demand for forcing, and you know that is what uses up the immense number of Harrisii that are sold. It would be valuable chiefly in private collections and ought to bring at least ten dollars each—as large a price as Auratum did when first introduced."

"I can sell them less than that. At what do you sell Harrisii now?"

"Very low—almost as low as Longiflorum."

"Well, I will sell you these at the same price."

The latter answer was uttered with altogether too much satisfaction, and we sadly turned to where the flower had been severed from the stem, remarking, as we began to be enlightened, "Ah! you have been doctoring this with chemicals."

"No sir," replied Mr. Henderson, "we have not been doctoring this with chemicals, but it has been stuck in a bottle of red ink for the last three hours."

MORAL: Don't take every child wearing a red fez, to be a little Turk, for man is full of guile even as the lily was full of red ink, though it may not be as apparent. *New York.*

EDITORIAL NOTES.

HISTORY OF HYBRID GLADIOLUS.—The *Gardeners' Chronicle* says: "The celebrated French cultivator of the Gladiolus, M. Souchet, late gardener at the Imperial gardens at Fontainebleau, began to hydridize or fertilize for raising new varieties of the Gladiolus in the year 1834, and with the varieties thus obtained Mr. Kelway, in the year 1851, began fertilizing the Gladiolus gandavensis, a hybrid raised from an imported species from Natal, called psittacinus, or Natalensis, and the seedlings produced by this hybridization formed the ground-work of the extensive stock, now numbering upwards of 2000 varieties, grown at Langport!"

LIABILITY OF SEEDSMEN.—A case of unusual interest between a seedsman and his customers has been decided by the Supreme Court of Pennsylvania; an abstract from the Philadelphia *Public Ledger*, we give:

"In the case of Shisler against Baxter, which came before the Supreme Court upon writ of error to Common Pleas No. 1, and in which Chief Justice Mercur has filed an opinion, the question to be determined was as to what constitutes a warranty of quality in cases where goods are sold after having been first inspected by the purchaser. In the case at bar, the plaintiff went to the store of the defendant to purchase seeds. He had bought some the year before which had turned out well, and he asked for some of the "last year's" stock. The defendant showed him some which he said had been left over. These the plaintiff bought, but after using them, he contended that they were worthless and not what he had asked for, and he brought an action for damages. The Court below entered a non-suit, on the ground that there was no warranty on the part of the seller that the seeds were such as the purchaser wanted, and this decision is sustained by the Supreme Court. There was no evidence that the defendant had practiced any fraud. A mere representation as to the character of an article sold does not constitute a warranty, nor is it evidence of a warranty. Where personal property is sold on inspection and the vendee's means of knowledge are equal to the vendor's, the law does not presume an engagement by the latter that the thing sold is of the kind or species contemplated by the parties. In this case the seed sold was shown to the plaintiff before he purchased. It was in paper packages just as it had been bought by the vendor himself, and as to its quality both parties had an equal opportunity of judging. Under such circumstances the exemption of the vendor from liability is too well settled to need

a prolonged citation of authorities. Judgment affirmed."

To our mind this is a much more important decision than that of some of the lower courts, from which no appeal has been taken, and which have excited so much consternation among seedsmen. Here the case was decided by a court presided over by very able judges—the Common Pleas of Philadelphia. An appeal was taken to the Supreme Court, and the decision again sustained.

The judges must be answerable for the law. Common sense will endorse it. Any one can tell for himself whether a seed is good or not by cutting a few open. If good it has a whitish or natural look; if bad a brownish or unnatural one. If the seed be small a fifty-cent pocket lens will tell it for him; and for any judge to decide that one who sells a ten-cent package of seed should have to pay hundreds of dollars in "consequential damages," because a man sowed bad seeds which he might have known for himself were bad, is too absurd for contemplation. The funny papers tell us that when Henry Ward Beecher first went to farming, he planted pieces of dried apples in order to raise that particular kind. It is a pity that the joker did not wait longer for another idea from some modern judge and make Mr. Beecher sue the grocer who sold the dried apples, for damages because they did not come up!

THE EARLIEST NURSERY IN THE UNITED STATES.—We are inclined to claim for Germantown the credit of starting the earliest nursery in the United States. Of course Bartram's garden is older as a garden, and as its owner was a plant collector, and sold plants from his garden, it was in some sort a nursery. But the general propagation of fruits and flowers as a regular business seems to have been first made a business of by Christian Lehman, of Germantown, now the Twenty-second Ward, of the city of Philadelphia.

We copy the following advertisement from the Pennsylvania *Chronicle and Universal Advertiser*, from Monday, May 9, to Monday, May 16, 1768:

"*Germantown, April 12th, 1768.*

"TO BE SOLD.

"A choice parcel of well-grown young English Walnut trees as well as Pear and Apricot, and a curious variety of the best and largest sorts (from England) of grafted Plumb trees, fit for transplanting this spring or next fall, as well as a great variety of beautiful double Hyacinth roots, and Tulip roots, next summer season, and most other things in the flower or fruit tree nursery way.

"CHRISTIAN LEHMAN.

"N. B.—We likewise (on request and if bespoke in time) maketh up parcels of curious plants, shrubs, and seeds of the growth of this climate in such a manner as best secures them according to what country or climate they are designed to be transported."

Lehman's Nursery was where Chelten Avenue now is, and extended southwardly—all built over now. Many of his trees are still standing in Germantown especially Pear trees and English Walnut, of which there may be perhaps a hundred all told, bearing freely almost every year.

NURSERIES OF B MANN & SONS, LANSING, MICH.—These were started but 12 years ago, 8 years ago having but one 11 by 24 feet house. They have now about 3,000 feet of ground covered by glass for cut flowers, and about 15 acres of ground around them. Mrs. Mann superintends the making up of the cut flower department. They are also largely engaged in market gardening, and have 12 acres in small fruits.

DAVID DOUGLAS—the botanist after whom the Douglas Spruce and so many beautiful American plants were named, began life as an undergardener in Scone Palace, so famous in the political history of Scotland.

NURSERY OF MR. A. GIDDINGS, OF DANVILLE, INDIANA.—The greenhouses in the city cover 8,000 feet and are warmed by Carmody's sectional water heater. The leading cut flower work of the city is furnished from these houses. Mr. Giddings was in early—or rather earlier life—for he is yet far below middle age, a wholesale merchant in the town, and the nursery and florist business in which he has been so eminently successful has been the outcome of a natural love joined with excellent business abilities.

MR. GEORGE ROSENHAM.—As the West builds up it will become more and more an interesting historical question, who were the earliest nurserymen in the several sections, and we are always glad to place on record all the facts in connection with this subject. We are indebted to a correspondent for the following account of an excellent pioneer in this good work at Tipton, Mo.:

"The death of Mr. Geo. Rosenham, a gardener, nurseryman and florist, occured on the 19th of April at his home in Tipton, Mo. Mr. Rosenham has been a reader of the GARDENERS' MONTHLY for several years. He was born in Prussia, January 6th, 1824. From there he came to this country in 1849, and settled down in Fort Smith, Arkansas, where he lived till 1865, and then came to Missouri, settled in Tipton, and commenced business as gardener, nurseryman, and florist, which he followed with great pride to the day of his death. Mr. Geo. Rosenham was well known throughout Missouri as an upright, honorable man. His death was regarded as a public loss to Tipton, for the whole community seemed to have turned out at the funeral to do honor to his remains."

VALUABLE WORKS FOR SALE.—The wife of one of our distinguished pomologists, whose income has been seriously impaired since her husband's death, wishes to dispose of a complete set of the Proceedings of the American Pomological Society, for $50. As it is almost impossible to secure a complete set now, this is a rare chance. They are handsomely bound. She has also 14 volumes of the GARDENERS' MONTHLY, from 1869 to 1883, also handsomely bound, which she will sell at the cost of the work, with the binding thrown in—$28. We will forward to the lady the name of any one disposed to purchase.

EUCALYPTOGRAPHIA. — Baron Von Mueller is making progress with his grand work illustrating all the Eucalyptus or gum trees of Australia. The tenth decade is now before us. This now makes 100 species that have been worked up. This completes the main work, though some twenty more will probably have to be added to make the history of Australian gum trees complete.

FRUIT CULTURE.—By W. C. Strong. Published by Houghton, Mifflin & Co., Boston.

Mr. Strong's work on Roses, and other literary ventures, have been very well received by the community, and this argues well for this new candidate for public favor. It is a large duodecimo of 202 pages, and the aim which is very well reached is to give plain practical directions to new beginners in amateur gardening, in advance of what they may require when they get more experience.

MICROSCOPICAL BULLETIN.—Published monthly by J. W. Queen & Co., Philadelphia.

One of the most remarkable experiences in literature is that of scientific magazines. A love of science permeates the whole community, but very few scientific serials do more than pay the printer, and the majority die young. The cause is not difficult to understand by those used to serial work. There is a huge want, but people do not get what they want. The reader desires to keep up with all that is really new in science, but the editors are either too lazy to work to get these news, or so filled with hero-worship, that nothing to them is new unless it comes to them under the shadow of a great name. One can get a better knowledge of what is really new in science from the daily or weekly newspapers, than from some of the most pretentious of scientific magazines.

In microscopy there is a wide field. The microscope introduces us to a world fully as densely populated as the unaided eye can see. It is full of wonders hard to be realized by those who have never had a glimpse thereof. We know of no microscopical magazine that properly places before the community a tithe of what a live magazine could do.

This little affair is little more than an advertising circular, though full of excellent items that render it fully worth the trifling price charged for it. We have made the comments above in the hope of inducing the excellent house it represents to go further into the matter than it can possibly do here, and give us a magazine that would be worthy of the subject, and which they could well do if so disposed.

SCRAPS AND QUERIES.

CORRECTION OF NOTE ON PERSIMMON.—W. R. Gerard writes: "After sending my note on the word Persimmon (p. 152, GARDENERS' MONTHLY), I asked the Editor to change one of the sentences. Not having a copy of the MS. before me when I wrote, I made myself tautological. I intended that the words, "The signification of" should be omitted, and that the sentence should read, "The first syllable . . . is not so clear in meaning," etc.

DIRECTION OF LETTERS.—It may be well to remind our readers that, in writing, Penn. and Tenn. look very much alike; and as there are a number of post offices of the same name in Tennessee and Pennsylvania, letters often go astray. Post offices and signatures are also so often written so hastily that nobody can guess at them. It wastes no end of time trying to make out bad writing.

This is particularly the case with letters in French or German that come to us from Europe. Even natives of these countries that we have to call in to help us in these difficult straits, are frequently unable to make them out. We have a letter from Italy, supposed to be in French, which has been on our table a month, and nobody can make it out.

DANTE'S PRONUNCIATION OF VERONICA.—"G." says: "Concerning the pronunciation of the name Veronica, Dante (if my scansion is correct,) accents the penult, which gives us Va-ro-nee'-ka. He refers to the relic of that name."

[Besides the interest attached to the knowledge of how the word is pronounced by the great Italian poet, it affords evidence that the name of the plant in question had a different origin from the story of the cross. So far as we can learn the plant's name has always been pronounced Ve-ron'-e-ca; accent on the second syllable, as in Betonica. The two distinct pronunciations at the earliest introductions of the name, so far as an argument could be drawn from that fact, would favor a distinct origin. But, as we have already shown, the earlier Herbalists classed these plants with Betonica, and there is every reason to conclude that Veronica is a corruption of that word, and has no relation whatever to the legend of St. Veronica and the crucifixion; the adoption of that explanation by scientific men, is not in accord with that love of positive truth for which they are usually distinguished. They have here adopted as a fact, a guess, which we have seen has no foundation whatever.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

EXHIBITION NOTES FROM NEW ORLEANS.

BY M. H. LESTER.

I spent two hours among the California exhibits at the Exposition grounds a day or so ago. Conifers and fruit trees are looking splendid. I was glad to notice among flowering stuff Rhododendron occidentalis, and the pretty Australian Polygala Dalmasiana. The Rose exhibit in this collection is marvelous. Now would be the time to award premiums, when all the roses look so good, and not two months ago when nothing was visible but leaf buds and labels. The grounds are not remarkable for much else at present.

Inside, the Orchid exhibit is represented by about 800 plants. I notice in bloom Acropera citrina, Epidendrum oncidioides, E. vitellenum, E. odoratum, E. Brassavola, Lycaste aromatica, L. Deppei, Chysis aurea, and Cyrtopodium punctatum with splendid spikes, and several others of less note.

The exhibits of Cacti, Agave, &c., from Texas are getting small by degrees, and "beautifully less." I expect there will not be many left at the close.

In the plant department there are several specimens of Carica papaya—Melon tree—both in fruit and flower. This is the original Papaw. In going through our own houses one may see five varieties of Passiflora in bloom,—P. princeps racemosa, P. Buchananii, P. Fortdii, P. Kermesina, and another with variegated foliage; I forget the name just now. Also Clerodendron Balfourii. I have four good pieces of Phalænopsis amabilis in bloom; some Oncidiums, including sphacelatum, and sanguineum. My Dendrobium Wardianum, D. superbum, and D. thyrsiflorum are done. I got two good pieces of D. crepidatum, on fern tree blocks, in bloom for over a month. D. Parishii is fine. D. Dalhousianum has one spike open with 42 flowers, and 13 spikes in sight. I shall send you a photograph of this if I can get it taken to suit me. Also several Cattleyas of the Mossiæ and Labiata percivaliana section. I have had Coryanthes macrantha good, but it only lasts three days after the flowers are open. No Orchid on this place lasts so long in bloom as Galeandra Devoniana.

No city or place that ever I have seen presents such an array of flowers now, and for a month past, as the city of New Orleans. Solanum Jasminioides, Wistaria sinensis and Rhcyncospermum Jasminioides, 30 and 40 feet high, breaking out through the tops of Melia Azederach and Magnolia grandiflora; with Mareschal Neil, Gloire de Dijon, Reine Marie Henriette, Climbing Devoniensis, and La Marque. Roses hanging in garlands from tree to tree along the streets, is a sight never to be forgotten. The Crinums are all in bloom now; also several Yuccas, Pancratiums, Amaryllises, and almost everything else.

WORLD'S EXHIBITION AND COTTON CENTENNIAL—THE CONTINUED DISPLAY.

BY J. E. W.

The fine display of Citrus fruits at Horticultural Hall has been well-sustained, both Florida and California having largely renewed their exhibits.

In fact, there has been no flagging of interest or attraction in the fruit display since the first opening to visitors. In the early part of the season came the Northern fruits, later the Citrus and Tropical.

At the present moment these fruit displays are not the only attraction at Horticultural Hall. The fine collection of Orchids, Cacti, and Agaves in bloom are largely attracting attention. An almost regal display of Fuchsias in magnificent bloom, occupies the benches. I very much doubt if the collections of Geraniums in bloom, exhibited by E. Baker and S. Eblin, of New Orleans, have ever been equalled in an exhibit at the South. Very many of the trusses will measure four to five inches across, and of almost every tint of color. In the Mexican Government exhibit are some fine specimens of Palms—Oreodoxa regia (Royal Palm) Chamærops humilis, Cocos nucifera (Cocoanut Palm). Florida made fine exhibits of Phœnix dactylifera. California's exhibit of Palms was worthy of much credit for their healthy appearance. There were in their exhibit specimens of Latania borbonica, Chamærops humilis, Livistonia altissima. In the exhibit were also Arecas, Sabals, Phœnix, &c. Maitre & Cook, of New Orleans, had also a nice display and fine assortment of Palms—Areca lutescens, Phœnicophorium Sechellarum, Calamus asperimmus, C. Louisiamus.

The Rose display in the grounds around Horticultural Hall is worthy of attention. Florists of the City have contributed the greater portion. Maitre & Cook have over two hundred different varieties. Jules Fortu about one hundred. J. Eblin also has specimens. The Dingee & Conard Co., of Pa., Gabriel Marc, of N. Y., have displays. The selections are of the choicest varieties of Tea and everblooming varieties.

New Orleans, April 20, 1885.

FLORAL NOTES FROM THE NEW ORLEANS EXHIBITION.

BY W. H. BOOMKAMP.

Under the above heading Mr. M. H. Lester says a few words about the Horticultural Department of the New Orleans exhibition in the May number of the GARDENERS' MONTHLY. I was greatly surprised to find the following remark in it: "The Universal Bulb Co. make a good display in the grounds, but as none of their exhibits are labeled, it is not one in a thousand that knows what they are," etc.

In reply to this, writer would say that Mr. Lester is greatly mistaken. "The General (not the Universal) Bulb Co." of Holland had all their collective exhibits properly labelled. They exhibited 110 varieties of Hyacinths, 150 varieties of Tulips, 25 varieties of crocuses, and 50 of Narcissi, which were all named when writer left New Orleans, in the latter part of March. It would have been entirely out of place to label the different designs made of bulbs, as some of the beds contained as many as ten or more varieties.

Mr. Lester undoubtedly knows that the grounds are almost left to take care of themselves. When I left the grounds there were only two men to keep them (an area of about 170 acres) in proper condition. No wonder, then, that rose beds and other designs almost disappear under the weeds. As long as I could see personally that the General Bulb Co's exhibit was properly taken care of the labels were kept in place, but have no doubt that after leaving, rain, wind and weeds soon played havoc among the beds and made some names disappear entirely.

As a horticultural show this department of the exposition certainly was a great failure. The Fruit exhibit was very fine, but one would expect something more interesting than a fruit exhibit in such a magnificent structure as Horticultural Hall.

It always was a puzzle to me why the City of New Orleans wanted such an immense glass building in a climate where the summer lasts nine months, with practically no winter. A hall quarter the size, to exhibit Orchids, Palms and Cacti would have answered the purpose just as well, if not better, and the money expended on this grand but useless building could have made, in that climate, a paradise of the grounds.

What a pity it is that there was no plan in laying out the grounds. Mr. Parker Earle and Professor Tracy certainly deserve credit for what they have done under the circumstances, and few can understand how unenviable a position theirs was. Their labors would have been materially lightened, if a proper landscape gardener had been appointed; if the grounds had been worked after a plan made by him; and hundreds, if not thousands of dollars would have been saved that way. The trouble was, the director-general, Mr. Burke, undertook too much; instead of leaving the different departments in charge of the appointed heads, he would make suggestions here and there; alterations were made to suit his caprice, even when entirely against the principles and intentions of superintendents. As it is Mr. Burke has attained what

seemed to be his object, the erecting of large buildings, larger than any made heretofore ; but the Exposition as a world's fair will be pronounced a failure by every man who knows what a world's fair ought to be. As an American exhibition it certainly is a very fine one. The Government and States exhibits are the finest and most complete displays ever put up of their kind, but foreign nations (Mexico excepted) are very poorly represented.

Owing to the great distance New Orleans is situated from populous places the attendance is very thin, the gate receipts seldom exceeding $4,000 a day, barely enough to pay running expenses.

Mr. Baker in his excellent article on "Horticulture at the New Orleans Exposition," in the May number, speaks in vain to the Northern Horticulturists. They do not want to risk their goods to a slow freight line, especially under the present state of affairs at New Orleans.

Let us hope that the horticulturists of this grand Union will soon find a better opportunity to show what they can do. Give them a centre easy of access, and we may be sure of an exhibition just as grand, if not finer than any in Europe. Why can't we have an American Horticultural Exhibition? *19 Broadway, New York.*

[Aside from the difficulties referred to by our correspondent, the adherence to the old-fashioned method of premiums kept away a large number of the best exhibitors. In these days it is of no sort of value to any man to be able to say that he had the "best on exhibition;" but if the plan inaugurated at the American Centennial had been taken up and improved on, the awards would have been of great value.

That plan was, to state in the certificate what were the peculiar merits on which the award was based. This system does not prevent money premiums or medals of value being also awarded with the certificate if thought desirable; although money was not included in the Centennial plan. We know of a half score at least of leading Horticulturists who would certainly have exhibited if such discriminative awards had been made, who would not go a dozen miles with their goods for the chance of a few hundred dollars in premiums, and that be all. We felt very sorry when we saw this old fossilized method of competition, only popular at village fairs, proposed for a grand scheme like this, knowing full well it would be a failure; but as we have continually pointed this out in our magazine, we thought best not to say anything specifically on this occasion, but rather lend what aid our magazine could render to make the affair a success in spite of this radical blunder. Now that it is over, we may speak more freely, in the hope that other attempts may profit at any rate.—Ed. G. M.]

EDITORIAL NOTES.

EXHIBITIONS BY PRIVATE FIRMS.—Mr. B. A. Elliott, of Pittsburg, recently got up a horticultural exhibition on a grand scale, in order to aid a library association. It is a good plan to aid in advancing a knowledge of Horticulture, at the same time it serves a good cause; and it may be "bread cast on the waters," for which the average business man spends so much. It deserves to be at any rate. The Pittsburg papers speak of the exhibit as being unequaled by anything ever seen in the western part of the State.

THE PENNSYLVANIA HORTICULTURAL SOCIETY.—The Society is very much elated by the great success of their spring exhibition. Though they have been burned out twice, several times drowned out by Jupiter Pluvius, squeezed like an abandoned lemon and tortured by a heartless sheriff, and had no end of other misfortunes, it still rejoices in being yet not only among living things, but on the road to its former glory. It obtained over 300 new members last year.

CALIFORNIAN FRUITS AT THE NEW ORLEANS EXPOSITION.—A large number of premiums for fruit trees and fruits at New Orleans, were awarded to Californians, among whom the name of Mr. John Rock figures largely. Californians have good reason to be proud of the leading part taken by their State on this occasion.

EXHIBITOR OF CACTUSES AT THE NEW ORLEANS EXHIBITION.—We are informed that the collection of Cactuses, that received so much praise from our New Orleans correspondent, should have been credited to J. H. Erkener, of San Antonio, Texas, and not J. H. Wisher, as the types gave it.

THE AMERICAN ASSOCIATION OF NURSERYMEN.—The next meeting will be held in Chicago, June 17, 18, 19 and 20. The association has been found of immense benefit in bringing the trade to a better standing before the great world of business, and the meetings are receiving more and more, yearly, the encouragement of the best representatives of the trade.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.
DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXVII. JULY, 1885. NUMBER 319.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

The past autumn and spring were rather favorable transplanting seasons, but under the best conditions some extra care should be given the first season. The time is coming when transplanted trees of the past fall and spring will suffer more than during any other part of the season. If they show a vigorous growth of young wood no danger need be apprehended, as it indicates that the roots are active, and can supply all the moisture the foliage calls for; but if no growth has been made, no roots have been formed, and the leaves are living for the most part on the sap in the wood and bark; and hot, drying weather will tell with injurious effect on such trees. This is generally first shown by the peeling off of the bark on the southwestern side of the tree,—the most drying aspect; and where such exhaustion appears probable, much relief may be afforded by cutting back some of the branches, syringing with water occasionally, shading the trees where practicable, or wrapping the trunk in hay-bands or shading the southwest with boughs or boards.

In most kinds of soil the keeping the surface loose, by hoeing and raking in dry weather, will be an excellent method of keeping the main body cool and moist,—admitting the air, which is a good non-conductor. In soils, however, which are deficient in loam, and in which sand prevails to a great extent, frequent stirrings have a drying tendency, and a mulching of short grass, or decaying vegetable matter of any kind will be found very useful around transplanted trees, shrubs and other things.

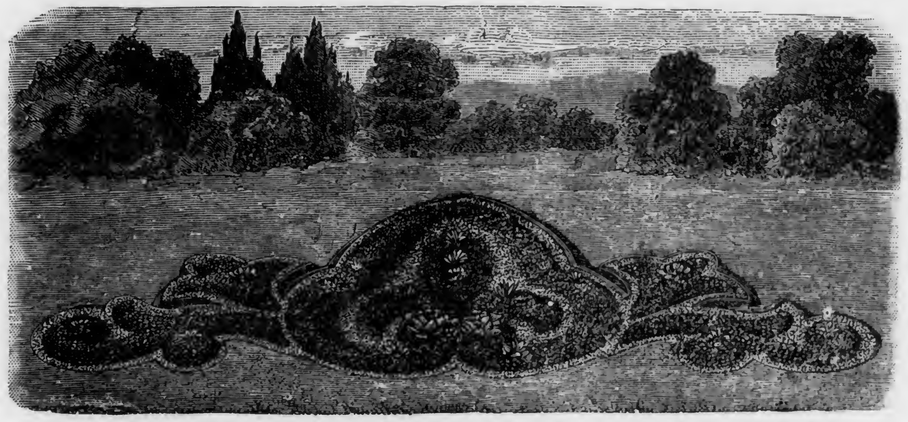
The Gladiolus has become one of our most popular summer flowers. Those who have collections of them arrange the varieties very tastefully according to their colors. Take a list of colors as they flower, so as to arrange them properly next year. We give the same advice for Petunias, Verbenas and Geraniums. The various shades of colors of these varieties, properly arranged, make beds peculiarly pleasing. This is one of the arts of modern flower-gardening, to arrange flowers properly according to shades of color.

This is the best season of the year for watching the effects of various plants in the now popular plan of carpet bedding, and then arrange the plants as well as the beds themselves for next year. Such beds are very effective when placed in contrast with more natural features. We give on the following page a sketch of one in a park in Germany, taken from the *German Gardeners' Magazine*, which will give some idea to those who have not seen them, how these beds are made.

We have so much greater variety to choose from that will succeed in our climate, that we ought to have prettier beds than they. Some things, however, like Lobelias, prefer their cool to

our warm climate, and we are without a first-class blue adapted to carpet bedding.

The lawns, walks and flower beds will still require constant care, and attention can be bestowed at this season on improving the form of trees and shrubs. In some parts of a large garden, trees are in better keeping with surrounding scenery when suffered to grow wild and pretty much to themselves; but, near buildings, or in any part of a garden which is to denote high keeping, symmetry will ever be considered a chief element in beauty, and the aim be, what after all is the true object of gardening, an improvement in fact over the prettiest natural scenes. Trees and shrubs can be made as regular as we wish, by training a shoot here,



and tying one there—now using a stake, at another time employing a string. After a few weeks they will grow as you have placed them, and exemplify the adage, that "as the twig is bent the tree's inclined." The most malformed or ugliest specimen of an evergreen may be made an exquisite "thing of beauty" by such trifling care.

COMMUNICATIONS.

CLEMATIS NATIVE OF SOUTH CAROLINA.

BY MRS. J. S. R. THOMSON.

Will not the Editor of GARDENERS' MONTHLY kindly correct a mistake which I note on page 185, June issue, relative to a Clematis sent him, which he describes as white? whereas the flower which I sent was pale lavender veined with white on inside of flower. I sent it to a florist to ask if it was not Crispa, but received no satisfaction from him, and then sent it to Mr. Meehan, having tested his kindly patience often enough to feel assured that I would be enlightened as to its real botanical name. The flower is a pale delicate lavender, well-shaped, exactly like the Crispa offered this season as a novelty, and is a habitat of some localities where I have collected the bulbs (alluded to on page 181, June issue, and which by authority of Profs. Thos. Meehan, Asa Gray and Sereno Watson I now know to be Zephyranthus Atamasco) Fairy Lily, and Clematis, abounds on our water courses. I must have, in letter accompanying the specimen sent, alluded to another rampant growing white Clematis, I think Virginica, which dies off annually, bearing in greatest profusion clusters of exquisite white myrtle-like flowers, followed by seed pods so beautiful and lasting that we use them to mingle with our grass bouquets for winter decoration when stern winter holds its icy sway. I think it will simplify matters by saying that "R. Thomson, Jr.," is my *nom de plume*, assumed to avoid local criticism alone—which, dreaded so much viewed afar, is not quite so terrible as my vivid imagination painted it. *Spartansburg, S. C.*

THE VARIEGATED EULALIA.

BY CHARLES E. PARNELL.

The variegated Japan Eulalia, Eulalia Japonica variegata, is a very beautiful hardy perennial plant, belonging to the natural order Graminacæ.

It is a reed-like plant of robust habit forming when well established large clumps from four to six feet in height and having long narrow green leaves, which are beautifully marked with alternate stripes of creamy white and green, much after the manner of the old ribbon or striped grass of our gardens, and presents quite as much variety in the stripings or variegation of its leaves, but differs in being more robust and complete in its manner of growth. The flowers appear about the middle of September, and the panicles are produced from the centre of the stalks; at first they are brownish with erect branches and not at all showy, but as the flowers expand, the branches of the panicles curve over gracefully in a one-sided manner, thus bearing a strong resemblance in form to what is known as a Prince of Wales feather. Each of the individual flowers, which are very numerous upon each branch of the cluster, has at its base a tuft of long silky hairs which greatly contributes to the feathery lightness of the whole. If the flowers are gathered as soon as they are at their best and carefully dried they will prove to be very desirable as parlor ornaments, for when placed in a dry room they fully expand and present a most graceful and beautiful appearance, not unlike that of an ostrich plume, and moreover they will last for many years.

This Eulalia is a plant easily cultivated and when well grown is especially valuable for subtropical work, although it is equally at home in the mixed flower border, or in groups or single specimens on the lawn. It prefers a rich deep loamy soil, and requires copious waterings during seasons of drought. After the plant becomes well established it should be given a good dressing of well decomposed manure every fall, and this should be dug in in the spring when the plant should be cut back close to the ground.

For the introduction of this beautiful plant we are indebted to Mr. Thomas Hogg who discovered and introduced it from Japan.

Propagation can only be effected by a careful division of the plant and this operation is best performed early in the spring, before the plant starts into growth; but it should be borne in mind that the plants make but little growth the first season; afterwards every season's growth adds to the beauty of the plant both in size and vigor. From this it will be seen that frequent removals or divisions should be avoided and that a liberal application of manure every spring, with copious waterings during seasons of drought, are the essential requisites to the successful cultivation of this very beautiful plant.

Queens, N. Y., June 1st, 1885.

EDITORIAL NOTES.

CULTIVATING THE MAMMOTH SEQUOIA OF CALIFORNIA.—To the Editor of this magazine, one of the most interesting lessons learned in California, was one which only one experienced in the culture of trees could learn; namely, that the Sequoia gigantea is by nature a swamp tree. The places where they grow now are comparatively dry; but two or three thousand years ago they followed the track of receding glaciers, and they received the melting snows from the tops of mountains that have no summer snows now. The ground on which these mammoth trees stand, once very wet or even swampy, has become drier through the long ages. Horticulturists know that swamp trees generally grow very well in ground that is comparatively dry, but seeds of such trees will not sprout in anything but the moist, oozy moss on the top of a swamp or damp ground. Hence, the only young trees we find in the mammoth tree locations, are where a chance seed happens to fall on a moist rock, or other damp situation. Young trees are common only in one location where clouds condense against a mountain side and the whole situation abounds with springs and oozy spots. Here in the east hundreds of trees have been planted during the past quarter of a century, but rarely has one lived more than a few years. They do not mind the winters. We have known them stand 20° below zero uninjured, but some fungus, favored by a dry atmosphere, carries them off gradually during the summer season.

Profiting by these facts, the writer brought three strong plants from California and set them in a swamp. Usually when we set swamp trees in a swamp, they will not grow unless they are suffered to grow into the swamp themselves. We make a mound and plant them in the mound, from whence they root down as suits themselves. These three plants have had two winters and one summer; the past winter being a terribly severe one. To-day they look perfectly sound and flourishing, and the Editor believes that he has at last discovered how to make the great tree of California thrive in eastern gardens.

TAR WATER AGAINST INSECTS.—Water strongly impregnated with tar, is becoming very popular in Europe as an insecticide.

PUBLIC SCHOOL GARDENS.—Great efforts are being made in France to have gardens attached to all public schools. It is found in Philadelphia that there is always a pressure to get into those

schools that happen to have little gardens attached. The Newton School in West Philadelphia, has a nice garden, and there is one in Frankford that has a very beautiful fern rockery in the front yard. These efforts, however, all come from the local School Boards. The Board of Education that has the matter wholly in their hands, has done nothing to foster or encourage this love.

MAGNOLIA CORDATA.—All that we have seen of this rare Magnolia is nothing but the common Cucumber tree, Magnolia acuminata, which sometimes has cordate or heart-shaped leaves. We have good reason for believing that the true plant, which grows wild in Georgia, has never yet been introduced to nurseries, either in the Old World or here.

PRESERVING IRON SURFACES FROM OXIDATION.—Pulverulent zinc is mixed with oil and a dryer, and the mixture is applied with a brush. For ordinary exposure, one coating of this mixture is affirmed to be sufficient, but a double coat, it is claimed, will afford a sure protection against both the atmosphere and sea water. A good formula for this zinc paint is the following: Zinc in powder, 8 parts; oil, 71 parts; dryers, 2 parts. The mixture should be prepared freshly, and only so much made as is required for the time. The zinc coating imparts to the iron a steel-grey color, and does not interfere with the application of another coat of paint.—*English Mechanic.*

PORTRAITS FROM BEDDING PLANTS. — Leaf plants, or carpet bedding, as they are called, are quite familiar in the form of lettering, out in our park, or spelling the names of rural railway stations. *Town Topics* tells how, two years ago, the superintendent of the Allegheny Park at Pittsburg, Pa., planted on a sloping bank, in medallion form, likenesses of Washington and Lincoln, that were so true to life that they could be recognized three hundred feet distant. The design was so original and so cleverly brought out that thousands of persons repaired from all parts of the country to see how well the products of nature were made subservient to art.

ROOT INSECTS ON THE CLEMATIS.—Galls that appear on the roots of the Clematis, much resembling those which appear on the roots of grapes attacked by the phylloxera, are well-known enemies to cultivators of the Clematis. Prof. William Trelease has examined critically these galls, and contributes to the *Country Gentleman* a very interesting account of what he finds. He finds the galls are formed by worms that belong to the group Nematodes, and similar to the Trichinia found in pork. A number are known as parasites on the roots of plants, just as others are parasitic in flesh of animals.

SPIRÆA ASTILBOIDES.—Under this name an herbaceous plant with something the appearance of Astilbe japonica has appeared in the English gardens. No one knows its origin. The heads of flowers on the panicle are arranged in cylindrical spikes about two inches long and a quarter of an inch thick. For cut flower work the feathering character of Astilbe will be superior, but still as an ornamental herbaceous plant this one has charms of its own.

SCRAPS AND QUERIES.

THE HEN AND CHICKEN DAISY.—"S. T. W.," Forest Grove, Oregon, writes: "I send by this mail a box containing a daisy which you will see has assumed a somewhat singular form; viz. A number of small daisies around the central. One or two of my bunches show this tendency. One flower had 18 smaller ones on stems from ½ to 2 inches long. Is it common, and would it be worth while to perpetuate it by propagation? There has been no seed formed as yet, but may be. It is a seedling with the following history. Some years ago D. M. Ferry sent to the Warm Spring Indian Agency a box of seeds. They were sent to me by the clerk. For several years I had planted them in boxes without getting a plant. Last year I mixed them in with a lot of old seeds I had on hand and sowed them with a hand-drill for a wild garden. This spring I found them and transplanted them on the east side of the house, where they are in rich ground and shaded most of the day."

[The peculiarity is not uncommon, and is known as the "Hen and Chicken" daisy. When a plant once takes on this form it can be perpetuated by offsets, and probably by seeds. The law that induces these changes in plants has never been discovered. People have been satisfied to call them sports, monstrosities, freaks, and so forth; but these names explain nothing.—Ed. G. M.]

LAVATERA ARBOREA VARIEGATA. — Mr. Slocombe sends a flowering branch of this beautiful shrub, which ought to be hardy where the exposure is not too severe. The green and white are distinctly marked, and the abundance of the minute althæa-like purple flowers set off the variegated flowers to great advantage.

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

NOTES ON MILDEW AND OTHER TOPICS.

BY JOHN MURCHIE.

Much interest seems to be taken in the subject of "Mildew on Roses" and its cause. I am of your opinion, Mr. Editor, that mildew very seldom attacks healthy plants, and when it does we are simply told "it is a chill." Roses are much more liable to the attacks of mildew in autumn and spring than in winter, when little or no air is admitted to the house. Now I will state what I consider the most prolific source—cause—of mildew; namely, the manner in which the plants receive this chill or check, which, if properly understood, mildew would seldom be seen, at least on healthy roses.

Through carelessness and neglect the house is allowed to rise to too high a temperature, the house is found standing at 90°, the air is chilly outside, and the sun is shining brightly. Then, nine times out of ten, up go four or five ventilators, and out rushes the heated air carrying with it every particle of moisture the house contained, causing the tender points of the shoots and young leaves to droop or wilt by the sudden evaporation of their sap. The higher the temperature of the house the more moisture the atmosphere contains. The freeing of this heated air is followed by a drier air, which absorbs moisture quickly, hence the evaporation, and hence the chill, for I think this evaporation causes the temperature of the young shoots and leaves to be much lower than is indicated by the thermometer in the house.

I have not scientific lore enough to explain this as fully as I would wish, but I am satisfied of the effect produced by this cause. How evaporation affects the organism of the tender wood and leaves, causing them to wilt, I do not know (perhaps the Editor will explain). This much we do know; they do wilt, and I believe from this cause.

One such chill has a worse effect on healthy roses than would be caused by the temperature of the house touching freezing point if the change was gradual. The plants receive a chill in this way, when to all appearances there has been no such thing as a draught of cold air. When the house is thus overheated, the paths and benches should be thoroughly sprinkled and air admitted sparingly.

I was interested in the duration of the flowers of Cyclamen, as recorded by Mr. George C. Butz, and will give an instance where the removal of pollen shortened the life of the flower. About the middle of March I had in flower plants of Cattleya Skinneri and C. Trianæ. The plant of C. Skinneri had eighteen flowers. I removed the pollen balls from three of the flowers for the purpose of hybridizing Trianæ on the morning following. The lips of the three flowers were rolled tightly around the column, and they faded and fell off more than ten days before the other fifteen flowers. The flower of C. Trianæ, to which the pollen was applied, began to droop almost at once, and promises to give a crop of seed; but the getting a crop of plants is not so easy. A plant of Cypripedium insigne here with Mr. O'Brien has produced two flowers on one stem for three years in succession. I asked Mr. O'Brien to mark and remove it, and try to perpetuate it, but he neglected to do so. We will watch it another year.

I send you with this a flower of Phalænopsis Schilleriana, with three very perfect lips. There are two flowers exactly similar on the same spike.

Could you not induce the Rev. L. J. Templin to continue his description of Interesting Vegetable Forms? It is very instructive as well as interesting. *Sharon, Pa., April 11th, 1885.*

[There is no doubt but plants with low vital power become afflicted with mildew, and other fungus diseases, when plants under the best conditions of life will escape. It may be necessary to explain that a plant under these low vital conditions need not necessarily be diseased in the full sense of the word, for, it is probably here that so much confusion exists between two great classes of intelligent people—one, those who believe the minute vegetable organisms attack only plants already diseased, and those who are satisfied they will attack the most healthy plants. For instance, in the north of Europe the English gooseberry is at home. It delights in a moist climate. When it is planted in more Southern latitudes where the climate is drier, it mildews. The plants are still healthy—at least no one would call them diseased

—but the drier climate somewhat weakens their power of resistance, and then they are to mildew an easy prey. So with the garden pea, also a lover of a cool northern climate. Those we sow early bloom and keep healthy to the last, but late sown peas mildew, and come to nothing. They are healthy, but yet weak. It is a nice distinction between a low vital power, and actual unhealthfulness, but yet an important one.

Mr. Murchie's suggestion about the evaporation from young growth may also be seen by these illustrations, to have good ground; for no doubt it is the strain on the juices of peas and gooseberries—plants accustomed to a moister climate—that first leads them to tire of the great struggle for life.—Ed. G. M.]

PERMANGANATE OF POTASH.

BY N. ROBERTSON.

I noticed an extract in the *Canadian Horticulturist* from the *Garden*, London, of a party that had been experimenting with this material, which induced me to try it, and as his experiments cannot reach many I will repeat them briefly, adding my own opinions of it.

He says, "I had used this as a deodorizer and disenfectant and as such recommended it to a friend. For convenience sake he kept it in an old can near a houseful of Pelargoniums. A young practitioner took it and watered the plants on one side of the house with it. Dire results were expected from it, but quite the reverse was the result, for the dosed plants showed increased instead of diminished vigor. I at once commenced a series of experiments with it, using an unvarying strength of as many crystals as covered a six-penny piece to one gallon of water, for watering the soil; but for syringing used double the quantity of water. Rare ferns, fuchsias, tender grasses, roses in pots &c., are to all but myself a mystery of luxuriance;" and goes on to state that he had tried plants in sand saturated with a strong solution, covering the surface with cork to keep the roots out of the light. Those plants are vigorous and alive.

For vase plants it is evidently good as the water does not require changing or become offensive but preserves them in an unusual freshness and vigor. I have also used it in glass buttonhole holders, the flower stalks seized and absorbed the coloring matter in about an hour. This was especially the case with yellow flowers. Overhead watering with this liquid is disastrous to our common enemy, the green fly.

An amateur of considerable experience told me my plants never looked like what they do this year. My primulas are especially fine. I attribute it to the use of permanganate of potash which I have been using on them this winter. Green fly has entirely disappeared. From his remarks I looked up the article I have given a part of and my experiments carry out what is stated. I have doubled the quantity and syringe every second night with it. Green fly and mildew on roses have disappeared, and the plants seem to have renewed vigor; but as yet time has not permitted me to give it as a deodorizer the full value he does. In using it for syringing I find that when it stands mixed for any time it is liable to leave marks on the leaves. Not so if it is newly mixed. It is also an extremely cheap article, and will be easily reached by any who wish to try it. A continued application for some time to see its effect properly will have to be pursued. Although it kills green fly, it will not prevent new crops coming; and every one ought to know how fast that is.

Supt. Government Grounds, Canada.

THE RELATIVE COST OF STEAM AND HOT WATER HEATING.

BY A. B. FOWLER.

I have been making some inquiries, by mail, of florists, covering the country from Bangor, Me., to Baltimore, Md., and from the Atlantic to Chicago, Ill., hoping thereby to obtain the practical facts regarding the comparative merits of steam and hot water as heating mediums for greenhouses. Responses to my inquiries establish the following facts, viz.: During the past winter one ton of coal burned in a hot water apparatus has heated 108 sq. ft. of ground covered by glass to a temperature of 53⅓°. One ton of coal burned in a steam apparatus has heated 149 sq. ft. of ground covered by glass to a temperature of 60¾°. The questions submitted to those using hot water were identical to those sent to users of steam, and while the hot water apparatus were of all the different kinds, those of steam were all of one kind, "Exeter."

I do not know of any method of combining these results, so as to bring into simple form the comparative value of one ton of coal in either apparatus, but submit what information has been gained for the benefit of those interested, if you choose to publish it. *Exeter, N. H.*

[We suppose a very large number of comparisons might give data from which we might get an average; but averages are dangerous in calculations of this kind. The heating of a house very often depends as much on the setting of a boiler by the mason, as on the actual heating capacity of the boiler and pipes. The glazing of a house has an influence, and the velocity of the wind in connection with outside temperature will make the inside vary immensely. As a question of physics, it takes more coal to heat a certain amount of water to the condition of steam, and to keep it to the condition of steam, than it does to warm water; and if people could only persuade themselves to let the warm water run down hill, as long ago advocated by Mr. William Saunders of Washington, instead of the silly practice of forcing it up hill as everywhere prevails, we should have a much better showing for hot water than the figures collected by Mr. Fowler can possibly show. But though it must take more coal to make steam than hot water, there are so many counterbalancing advantages for steam in many instances, especially for heating large establishments, that it is better in these cases than hot water.—Ed. G. M.]

A REMEDY FOR ROSE MILDEW.

BY A. VEITCH.

Since the fact became known that linseed oil and sulphur kills mildew without hurting the foliage of roses or other plants, it is claimed by some that the oil is wholly unnecessary as sulphur alone is a perfectly safe remedy. It is true that this substance has been frequently used without doing harm, but it is also true that in untold instances much mischief has been done by applying it in this state even when under the direction of experts. Knowing this, and also that such work is often intrusted to incompetent hands, it seems highly important that a harmless remedy has been discovered which not only kills mildew but also prevents it appearing, however favorable the causes might be for its development. That it can do this is placed beyond a doubt, for we know of several cases in which plants perfectly infested have been made clean and kept so by occasionally renewing the dose.

But the merits of this mixture do not end with the destruction and prevention of mildew. Red spider cannot live in the house in which it is freely used. And there is good evidence for believing that the plants are benefited by the vapor from the oil in the atmosphere; but whether this comes by inhalation or by lubricating their external parts we presume not to say; but certain it is under this treatment the leaves assume a deep and glossy green which is rightly interpreted as a sign of vigorous health.

In recommending this remedy "to the afflicted" we do not assume the role of one who trumps up a quack medicine for gain, but from the conviction that, all in all, it is the best yet made known, and those who oppose its introduction may yet find it take the place of all others.

New Haven, Conn.

[The writer of this has two houses, one wholly with Catharine Mermet, the other, several kinds mixed, in which mildew had always been troublesome, though sulphur was freely used. This season the pipes were painted as recommended last fall by Mr. Veitch, and there has been no sign of mildew since.—Ed. G. M.]

A HYBRID BETWEEN THE ROSE GERANIUM AND THE PELARGONIUM.

BY ERNEST WALKER.

The difficulty experienced in obtaining seed of the Rose Geranium is well known—at least to me. In 1881 and previously I had tried a number of times to induce the flowers to form seed, by fertilizing them with their own pollen, in vain. At last I tried fertilizing the flowers with pollen from the ordinary Geranium and Pelargonium of florists with but little hope of success, from the difference in species. But to my surprise and pleasure after watching anxiously for the results, from thirty crosses I obtained two plump seeds; one from a cross Rose Geranium Zonale, Wonderful; the other from Rose Geranium Pelargonium, Lady Washington.

The seeds were carefully placed in the soil, and though slow germinating they at last unfolded their seed-leaves above the soil. Eagerly I watched the plumules unfold and with pleasure I saw, as one after another of the leaves unwrapt itself, after the third and fourth attained their size, unmistakable evidence of their being affected by the cross. I say third and fourth because variations or peculiarities manifest in the first two leaves are not reliable or permanent.

Unfortunately the cross between the Rose and Zonale Geraniums, which appeared the more promising, was lost. Being of delicate constitution—as I observe seedlings effected by crossing frequently are at first—a little extra water that dripped into the pot from a leak in the sash one rainy day caused it to damp off.

I was more successful with the other, from in-

creased care, and more vigor in the plant. After a few weeks it grew vigorously and the leaves still retained the indications of being a hybrid; they had the lobed and jagged leaves of the Rose Geranium and the crispness of the Pelargonium; but the leaves were distinct from either. I propagated several plants to guard against losing the stock. I waited almost impatiently for them to flower, but, after some time, it began to seem to me as if they were intending to consult their own pleasure in this matter.

I have waited three years. A few days since they came in bloom and most profusely. They prove to be genuine hybrids (cross between species). The flowers are midway in size between the flowers of the Rose Geranium and Pelargonium; they have the rose color that belongs to both parents but inclining to the silvery rose color of the Lady Washington Pelargonium, while all the petals are stained with the rich dark maroon that enriches the beauty of the petals of the Pelargonium. I hope to make it the basis of a class of larger-flowering Rose Geraniums. Thus — as is also suggested by Jean Sisley in his article, page 185 of June GARDENERS' MONTHLY, 1884, in which he speaks of a new species in Caryophyllacæ arising from a cross between Dianthus plumaris and D. caryophyllus—the creation of new species as well as varieties is not altogether beyond the reach of human effort and perseverance..

New Albany, Ind.

SHRUBBY BEGONIAS.

BY N. ROBERTSON.

There are very few classes of plants more easy to manage than these are, requiring a good open porous soil, fairly rich, with their drainage perfect, and at no time an over supply of water. Their roots will not bear any sour material or stagnant water about them. The little care they require, and the fine display they make, will always place them amongst the first ranks on the shelves in the greenhouse. No class of plants will more easily succumb to your wishes than they will.

In most all collections of plants are to be found such varieties as Begonia Fuchsioides, Sandersonii, Richardsonii, Weltonensis, and a few others which are always a pleasure to see, but there are others not inferior, perhaps superior, of which we never hear or see anything, a few of which I will notice:

Begonia Manillensis.—I cannot say that I have ever seen a more desirable one than this, and that will give more satisfaction. It has all the qualities that could be desired. A hardy constitution, always in flower, with its white waxy looking foliage and flowers, and neat dwarf spreading habit, makes it one of the best plants I know of for any purpose. Cuttings just rooted throw up their flowers. In fact I have never seen it out of flower.

Begonia Caracasiana.—Of more robust, stately habit, bearing great abundance of light silvery pink flowers, with its beautiful foliage, will make its mark anywhere in a collection. This one, in so far as I have seen of it, may be called a winter flowering one. Its flowers are of long duration, and very attractive.

Begonia Diadema.—Of its flowering qualities I cannot say, as I have not had it long enough to prove that; but its unique foliage on short fleshy stems, and its leaves marked with white oblong blotches, make it an attractive specimen amongst other plants, and deserves a place in all collections.

Begonia incarnata.—This one is perhaps more frequently seen than any of the others, but not half so often as it deserves, for there are few of this class will do more to enliven the conservatory through the dullest months in the winter. It is always one mass of flowers with me during January and February.

There are perhaps many more just as deserving of notice as these are, but I am afraid this class is being over-shadowed by the tuberous rooted varieties. Much as they are to be admired, it would be a great pity to see any neglect shown to the shrubby varieties, which are surely more useful. The tuberous ones being mostly deciduous, which makes a blank part of the season.

Mrs. Bonner's notice in your March number is certainly interesting. She makes some good hits over this class of plants when she says she sees many notices of them but fails to find them in any catalogue, or anywhere else. Her case is mine. My search has been in vain also. Her hints are good, and we hope to hear her "speak in meeting" again.

Supt. Government Grounds, Canada.

BLIND WOOD IN ROSE PROPAGATION.

BY T. F. S.

Mr. Williams, of Sharon, Pa., complains of "blind shoots" and lays it to the use of "blind wood" for cuttings. Well, he is just about right, my experience in using that kind of wood bears out his theory. I was formerly in the habit of using "blinds," because they seemed to strike easier, and there was a seeming saving of bud bearing wood.

It may do, to increase the number of plants, especially if wholesaling, but it will not do if you are desirous of "cut blooms." I was told by a rose-grower the practice was bad, to use only wood from flowering shoots; since doing so have no complaint of blind wood. Judging from plants I have bought, think the general practice is to use "blind wood."

Saratoga Springs, N. Y.

EDITORIAL NOTES.

ROSE LUSIADES.—This rose was regarded as a most remarkable sport, and some attention was attracted to it even in this country where anything claiming to be "fancy" among roses is sure to have a good run. But it appears from a note in the *Journal des Roses*, that it was a case of merely temporary change, as we often see in our own country with Homer and other roses, and that the original observer was not a man with the floricultural knowledge to know the value of these temporary changes. This is the charitable view, although the *Journal* puts a harsher construction on it. However, the following is a translation which we find in the number for May 1st:

"Rose amateurs will, we are sure, learn with great interest, that the pretended new rose, Lusiades, has flowered in our establishment. It has occupied full sheets of advertisements in many publications, where it was certified that the flowers were of a golden yellow with carmine spots.

"When we received it we remarked that the plant in every way resembled Celine Forestier. The pretended raiser might have offered it as a fixed sport of that old rose. But now we can certify that Rosa Lusiades, which has flowered with us, is nothing else than Noisette Celine Forestier.

"It is also curious to state that this rose has already been sent out under the name of Liesis. It is therefore evident that Mr. Da Costa, who sent out Rosa Lusiades at the enormous price of 50f., and who does not reply to any letters which complain of his behavior, has deceived the horticultural public. SOUPERT & NOTTING."

"Luxembourg, April, 1855."

MIMULUS CULTURE IN POTS.—I have occasionally seen, in country districts, Mimuluses grown by cottagers as window plants, and with astonishing success. I have also met with good plants of them at cottagers' shows thoroughly well grown and flowered. Mimuluses have been much improved of late. The introduction of the copper-colored M. cupreus, some years ago, placed in the hands of cultivators an admirable subject with which to cross other kinds, and it has been successfully and well used for that purpose. We are now familiar with strains having large and handsomely-marked flowers, but they are, nevertheless, not so generally grown as one could desire. The fact is, a little special treatment is needed. The plants require a cool, shaded, airy position, and they should not be allowed to suffer from want of water. A cool north house suits them best, and here a fine display can be had all through the summer and autumn by keeping up a succession of plants. The seed is so small that a mere pinch will produce many plants, and if a little be sown in a pan or pot in some gritty soil in September, by January the young seedlings will be quite strong enough to pot off singly into 3-in. pots, and finally shifted into 5-in. pots to flower; or, if larger specimens be wanted, into 8-in. pots. The Mimulus is quite hardy; no heat is required, but by keeping the plants in a greenhouse all the winter they make certain progress. A little more seed can be sown in the end of February, and the produce of these two sowings will yield quite enough plants to keep up a good supply through the season.

Mimuluses succeed best in a north house where the floor can be sprinkled with water and the plants occasionally syringed. In a house where the temperature is high green fly is apt to attack them, but where they are kept cool and growing vigorously in a moist atmosphere this pest rarely troubles them, and, if it does, a good fumigation with tobacco smoke soon kills them. If there be a few exceptionally good varieties, a selection may be made for seeding from and for propagating by division of the roots. If the plants be cut down after they have done flowering and put into a cold frame they will throw up a number of shoots from the roots, and if these be divided and potted into good soil, they in course of time make excellent plants. But the cultivator should always make a point of raising a few seedlings; it is so pleasant to watch the expanding flowers, and even if some prove of an inferior character, some will certainly be satisfactory. A good strain of seed cannot fail to yield a good supply of plants.

There is no reason why Mimuluses should not be grown in the open border, but heavy rains and rough winds injure the plants severely, and soon rob them of their beauty. If planted out, the plants should be supported by stakes so as to lessen the chances of danger from wind, and if dwarfer growing plants can be put about them,

they will not only act as a screen against wind, but will help to keep the soil moist and cool. A pleasing effect could be secured by a bed of Mimuluses somewhat widely planted with mixed Verbenas as a base. This combination would be sure to give satisfaction; and the carpet of Verbenas would supply the coolness and moisture at the roots above recommended. Phlox Drummondi or Petunias kept pegged down and dwarf Chrysanthemum-flowered Asters would also serve for a base; and, in fact, many combinations of this character might be worked out. Above all, a few plants should be well-grown in pots, for it is in this way that Mimuluses are seen to best advantage.—*Garden.*

SCRAPS AND QUERIES.

DISEASE IN ROSES.—A Saratoga correspondent says: "Upon investigating into the cause of some of my roses dying, I find nothing in the soil to show any reasons for it, unless it be a white, thread-like fungus; and yet where found among the roots of the roses that were all right, it seemingly had no effect. I noticed where it was against the boards on the side of the bench, that it seemed to harden the ground and make soil appear as if mixed with flour. Is the said fungus death to plants?

"The month of April was cold; average temperature 40°. May has been cold and cloudy; so far from 6 to 12° frost the first 5 days."

[It is not possible without more knowledge of the circumstances, to say whether the fungus injured the rose or not in this case.—Ed. G. M.]

NEW CARNATIONS.—"C. M.," Hudson, N. Y., says: "I send you to-day, as a novelty, my new Carnation, 'Canary Bird.' Also one that I believe is quite as unique, though perhaps it may be otherwise, as I have not seen it before. I call it the 'Magenta Queen.' The yellow one is the last of the crop from the mother plant, and is less than two-thirds of the size of those which have preceded it. Its only fault is, it has no fragrance, so far as I can perceive. I have no plants for sale, and am not seeking notoriety. I shall be only too glad if I am able to perpetuate the stock, and one of these days seek your aid in disseminating it."

[Unfortunately our correspondent had neglected the oft-repeated directions to send things intended for the Editor to him addressed, "Germantown near Philadelphia." They were sent to the publication office, and, by the time they had been re-mailed to Germantown there was nothing of the flowers left but the dried-up calyx.—Ed. G. M.]

BEAUTIFUL PANSIES.—A collection from Mr. John F. Clark reminds us that though we see large and showy pansies everywhere, not near as much beauty has been evolved from them as they are capable of affording. Some of these pansies are so round, that when laid on a dollar none of the silver is perceptible. And they are as flat as the silver dollar, and this we think gives a charm to a pansy, though there are times when a crumpled flower may have a style of beauty to captivate some tastes. Another feature that gives a charm to a pansy, and which some of these possessed, is a thick, leathery texture. They might be exposed to the wind without dread lest they blow to pieces. Some of these had these good points. In the early days of pansy improvements there were individuals with such good characters, selected, named, and propagated by cuttings, just as Fuchsias or Geraniums are now propagated—but the ease with which fairly good kinds can be raised from seed has banished these all. Yet even seedlings may be so provided for that strains with these good qualities may be secured.

DOUBLE RICHARDIA ALBA MACULATA.—Double callas, or callas with two spathes, are not uncommon, but one of this species sent to us by Mr. Slocombe, of New Haven, is a novelty.

In a calla flower, the white spathe is little more than a colored leaf, and in the so-called double cases, it is only the production of an additional leaf. In this case it is very pretty, the primary leaf being long and wavy, with a pretty mixture of green among the white. It is the additional leaf that makes the white spathe. If the habit could be fixed the florists would have a treasure.

NEW OR RARE PLANTS.

DIEFFENBACHIA REX.—The whole tribe of Arums, or, as American boys would say, Indian turnips, affords us some of the most beautiful kinds of ornamental leaf plants known. This one is said to be especially beautiful, and was sent out first by Mr. Wm. Bull, of Chelsea, London, who kindly furnishes us with the following account of it:

"We have in this the King of the genus—a very handsomely marked plant of free and vigorous habit. The leaves are closely placed on the stem, the leaf-blades elliptic-lanceolate, unequal-sided, of a very deep green color, passing to paler green near the edge of the narrow side, the whole surface to within about half an inch of the margin thickly covered with oblique-elongate angular white blotches, which take the same direction as the venation, and are here and there slightly veined and suffused with green." It was introduced from South America. This was one of the twelve new plants with which Mr. W. B. gained the First Prize at the Royal Horticultural Society's Exhibitions in 1880, 1881 and 1882.

Dieffenbachia rex.

Fruit and Vegetable Gardening.

SEASONABLE HINTS.

In many amateurs' gardens late peas are valued. It is essential that they be planted in the coolest part of the ground. The pea is a cool country plant, and when it has to grow in warm weather it mildews. The Marrowfat class are usually employed for late crops. They need support. All peas grow better and produce more when grown to stakes. Bush beans may be also sown for late crops. A very deep rich soil is necessary to tender, crisp pods. The Lima bean will now be growing rapidly. It is time well spent to tie them to the poles as they grow. The poles should not be too high—about eight feet is enough. They commence to bear freely only when the top of the pole is reached.

The lettuce is another cool country plant. It can only be grown well in hot weather when in very rich and cool soil. For winter use, beets are occasionally sown now, and also cucumbers for pickling purposes; but not often; and, at any rate, it must be attended to early in the month. Tomatoes trained to stakes give the sweetest fruit, and remain in bearing the longest; but many cultivators, who grow for size and quantity only, believe they have the best results when growing them on the level ground. Celery is the chief crop requiring attention. The great point is to get short thick-growing varieties, as the long kinds require so much more labor to blanch. There are now a number of new candidates, and people will try these varieties as they try new fruits. After so many trials with different ways of growing them, those who have their own gardens—amateurs, for whom we write—find that the old plan of sinking the plants in shallow pits is about the best. Trenches are dug about six inches deep, and three or four inches of manure then dug in, of which cow-manure is the best. They can be watered better this way in dry weather, when in these trenches, and it is so much easier to fill the earth about them for blanching purposes than when grown on the level surface. Soap-suds, as well as salt in moderate doses, is usually a wonderful special fertilizer for the celery plant.

Late cabbage is often planted in gardens between rows of potatoes, where it is an object to save space. Some fancy that the cabbage is better preserved in this way from the cabbage-fly, which, they say, prefers the potato; but on this point we are not sure. We do not think the cabbage does quite as well as when it has the whole ground to itself; but of course a double crop could not be expected to be quite so fine.

In the fruit garden there is little to be done at this season, either in the North or the South, if our instructions have been from time to time carefully attended to. Some like to make new beds of strawberries in the autumn, and the further we get south the more is this a necessity, and not a choice. But we should be careful in getting young plants in selecting from those which have healthy green foliage, and not covered by brown fungus spots. Fungus may or may not be a cause of disease; one thing is certain, whenever fungus grows on a plant its vital power soon will be exhausted if not already.

From the extent to which we find the practice prevails among amateurs, we may also hint here that it is very bad practice to pick off the leaves of grape vines with the idea that the fruit will ripen better therefor. Sometimes there are too many leaves. The growth is too thick; one smothers the other. In this case we may thin out the shoots, leaves and all, but never the leaves alone.

In many cases, should the autumn prove dry, it will be an advantage to water small fruits if water be convenient or cheap to hand. Drying off used to be thought a good thing—but like so many old notions, we find it has its extravagancies. The reason why raspberries, blackberries, and such things often winter kill is not because of late growths, but that they were half killed by premature drying.

COMMUNICATIONS.

CULTIVATION; AS AFFECTING THE STRAWBERRY.

BY J. B. ROGERS.

In the consideration of the cultivation of the Strawberry, under this heading, the first requisite is to form a clear conception of what the vegetative and reproductive organs are, and wherein their ultimate natural functions differ.

The vegetative organs are known as the root, the stem and the leaves, serving the purpose of an individual life to each plant; such a plant after a while produces a different set of organs, subservient to a different purpose; that is, the increase in number or the continuance of the species—namely, the flower, fruit and seed, called the organs of reproduction.

In the ordinary culture of the Strawberry little or no attention is given to the inquiry, whether there is any natural conflict between these two classes of organs, or if the vegetative will succeed and flourish on the same nutriment applied in the same proportion to the land as the reproductive organs.

Is it not a fact, almost without exception, the individual life and the reproductive part of the plant are blended into one grand whole, and the cultivator, blind as it were, forgets to examine the effect manures have on the essential organs of the flower, stamens and pistils, resting content so long as the eye is pleased with the appearance of the vegetative growth.

The importance of close observation in perfect flowering plants wherein both classes of organs are or should be in perfection is apparent at once, yet how much more important is it in pistillates, where the blossoms are already imperfect, performing their functions of fruitation only by the aid of pollen from some other plant, and in which plant growth can be measured only by comparison with other perfect flowering plants.

Since vegetative growth is the criterion by which the individual life of each plant is to be measured, a proper nutriment is necessary to the health and vigor of that life; the reproductive organs would seem to be somewhat dependent on the life so far as a suitable nutriment of plant growth is had, yet in many cases the highest development of the flower needs nutriment of other kinds.

The experiments of four years on twelve varieties of perfect flowering plants, under different manures, where close observation has been had as to the individual life, and that of the blossom and fruit, may suggest some thoughts for reflection and experiment.

For convenience the cultivation of the plants is divided into three classes, based upon the action of the manures employed upon the growth.

First. Those in which the highest type of vegetative, flower and fruit growth would seem to result from mixed barnyard manures, or commercial fertilizers poor in potash. The Primo, Triomphe de Gand, Bidwell and Sharpless are representative plants herein.

The Primo, named first in the list, makes in poor soil a vigorous plant-growth, flowers with irregular stamens, little pollen, fruit small and irregular in shape; with good culture a notable increase in the number of leaves, flower perfect, fruit medium to large, regular in shape, productive; high culture, increased vigor of plant-growth, stamens fewer in number, many bastard blossoms, tending to double flowers, berries few in number, very large, irregular. In this variety high culture would correspond nearly with good culture as to the Sharpless.

Omitting the Triomphe and Bidwell, we come to the Sharpless. In poor culture, corresponding to good culture in Primo, leaves three to five in number, medium plant vigor, bloom abundant, stamens imperfect, little pollen, fruit small and very imperfect; with good culture, corresponding to high culture in the Primo, vigorous to very vigorous plant growth, stamens abundant—perfect, pollen plenty, fruit systematic in shape, medium to large, prolific. Observe here, that in soil where the Primo begins to develop a failure as to growth of stamens and amount of pollen the Sharpless is at its best in these respects. With high culture, which may be defined as the point at which the prepondency of the pollen is at its height. It is at this point that Manchester, or Primo, planted near to the Sharpless, partakes the most in all respects of the Sharpless on my soil. The Sharpless as to plant-growth vigorous to very vigorous, leaves three to five in number. The reproductive organs begin to show signs of weakness, the character and number of stamens variable; many of the blossoms have a tendency to become double, pollen somewhat diminished in quality, some blossoms nearly or quite pistillate, fruit large to very large, inclining to coxcomb. Increase the height of culture, plant-growth still maintains its healthy appearance, the stamens disappear, blossoms few in number, pistillate, fruit will partake of the characteristics of variety planted near, provided the species be such that it maintains its perfect blossoms under this extremely high culture.

The Manchester, on my soil, shows the best results, so far as fruit blossoms and plant-growth is to be had, at what may be called high culture in the Sharpless. This is the culture when the Manchester developes the highest characteristics of any of the perfect flowering varieties that may be employed as a fertilizer.

Second. Those in which the highest type of vegetative, flower and fruit-growth would seem to

result from the use of potash, in addition to the manures already named in the first class.

The Miner is a representative plant of this class. While a good vigorous plant-growth can be obtained without a liberal supply of potash the stamens will be imperfect and pollen very scanty; the fruit although abundant, small and imperfect. In soil having potash the blossoms become perfect; fruit large to very large, productive. It would seem to require about the same nutriment as the Primo to give a good plant-growth.

Seth Boyden, No. 30, is gross and rank in potash. Its roots will withstand the carbonizing effects of potash the best of any plant I have ever experimented with. The vegetative organs thrive best in the same relative nutriment as the Sharpless, yet to fully develop the productive organs an addition of potash is required; use abundance of potash, and the white tip, so frequent in this variety, disappears.

With me any great amount of potash in the soil carbonizes the roots of the Manchester, causing the plant to die, hence cannot employ any plants of the second class as fertilizers.

Along the Hudson river the Manchester succeeds best in soil where the Sharpless is a poor pollen producer and the Miner is a good one; in all such localities the best result in fertilization is had with plants which on my soil would come under class second.

The third class includes the Cumberland. In the use of forty different manures the plant-growth has been remarkable as a resistant to the evil effects of so diversified nutriment. The blossoms remain very constant as to stamen and pistils. Many of the plants have few blossoms—some none. On those where an abundant crop is had the texture of the fruit varies greatly.

Charles Downing is another illustration. The same general characteristics are observed as to plant-growth as in the Cumberland, though a much larger proportion of plants are not fruitful. Small changes in the component parts of the manures employed to enrich the land would seem to be very preceptible, seen in variation of color and texture of the fruit.

These two I have ever found very uncertain as to results and apt to work harm in experimental beds, planted too close to other varieties.

These results would seem to suggest more careful attention be given to the nutriment of the Strawberry, and that a closer inspection be had of the results of such nutriment on the flower and fruit of the plant. *Milburn; N. J.*

[This is a very suggestive paper. There is no doubt some kinds of manure, and some kinds of treatment, under the general idea of "cultivation," will affect the vegetative, at the expense of the re-productive energies of the plant, and again, the re-productive will be unduly stimulated. This fact is very liable to be forgotten when reading the often contradictory experiences of people with the same variety. Still, there is the same difficulty with special fertilizers. There are soils abundantly supplied with potash in which these contradictory experiences occur all the same. A soil may have all the elements in abundance which analysis shows the plant to require and yet not do well, because it requires vital force to make use of them; and there are innumerable influences outside of mere soils that will often render a plant unable to make use of the food most desirable when the life power is in a different mood.—Ed, G. M.]

GRAPES IN PAPER BAGS.

BY MRS. J. S. R. THOMSON.

I am "only a woman" stumbling often accidentally upon valuable processes; have been cultivating fruits, flowers and vegetables for over twenty years, with my only aid, common sense and the many valuable magazines and periodicals, but had never read of paper bags for grapes. I have about twenty two very fine varieties of grapes, and each season was defrauded of half my crop by some insect (bees I guess) invariably piercing them, which of course induced speedy decay. In sheer desperation one season, as soon as fully grown, I procured about one hundred paper bags, mounted my step-ladder and inserted the finest bunches, sometimes two in a bag when very close together, and was delighted with the result; every bunch came out in a perfect state both as to taste and coloring. I had expected that failure would result, but it was "nip and tuck" either to risk the bags with chance of some grapes, or an entire certainty of total destruction by said insect. Is it bees that do it or what? My next door neighbor has twelve hives of bees, also many others; but sometimes I thought it might be the excessive rains that periodically visit us in August just at the beginning of our ripening time. I cannot ever get a bunch after September although bushels and bushels are on my vines each year, on account of the hole punctured by said insect; and would be so pleased to hear of some way to keep them longer. It would be a herculean task to me to bag my whole arbor, but I intend this year to have some fine specimens. I have eight to ten vines, young ones, of Delaware and Concord that I am taking especial pains in pinching in and have been plucking the leaves also, thinking sunshine an essential; but will desist now and note result. I insert a bunch in a small bag and then give it a vigorous twist at top and it remains there secure until removed.

[We have paid close attention to the bee question, and have no more doubt that the destruction is wholly the work of the bees than that we are writing this. The only remedy we know is to trap the bees and destroy them. This can be easily done.—Ed. G. M.]

EDITORIAL NOTES.

CULTIVATING ORCHARDS.—A correspondent sends us the following from California, as reported of a speaker at a late meeting of the State Horticultural Society; and remarks that it coincides with what the GARDENERS' MONTHLY has always taught about the proper arrangement of orchards:

"Mr. Aiken: A neighbor of mine has an apple orchard that he has cultivated for more than ten years. It hasn't borne anything this year. But a near neighbor has an orchard that has not been cultivated for ten years—never been taken care of whatever—and they are very near together, and the orchard that has never been taken care of or plowed has a large crop of healthy, fine apples. The man who had cultivated his orchard so tastefully and carefully said to me: 'It is a question of doubt whether it pays to take so much care of an orchard. Where I ought to have a thousand boxes, I haven't a hatful.'"

To some extent it does coincide. We have to be, however, careful of assuming too much in these cases. Sometimes there are other elements at work besides mere grass or mere clean surface. Where there is plenty of food for both grass and for the trees, and all other things equal, the grass-clothed orchard will always be the best.

ARTIFICIAL MANURES.—Notwithstanding the analyses of chemists, in regard to the perfection of chemical manures, and the fact which they so easily demonstrate that the greater part of stable manure is nothing but water and other material of no possible value and costing immense labor to handle, it is remarkable that the demand for stable manure is greater than ever. People find it best in spite of chemistry.

PEACH YELLOWS.—There seems to be some mixture of ideas in the minds of some who have given thought to this subject. A well known fruit grower of great experience recently spoke vehemently against the idea that fungus in the earth was the cause of the peach yellows. Later in the convention some one asked how long it would be safe for one to leave the ground in which a yellowed peach stood before planting another, and the speaker replied, "about one hundred years." This would seem to imply that in spite of his argument against root fungus, he thought the trouble was in the ground somewhere. If not root fungus, one can conceive of no reason why a new peach tree should not be planted at once where the other one grew. Mr. Gully, of South Haven, Mich., writes to Purdy's *Fruit Recorder* that there are plenty of trees from one to six years old near there growing in spots where trees with the yellows had been taken out. Indeed, the digging up of earth and exposing it to the atmosphere is often sufficient to destroy the fungus. Some years ago Mr. Alfred Cope, of Germantown, had a white pine tree badly infected with the yellows. It was a fine tree near the entrance gate, and which he was reluctant to lose. He took out with fork and spade as much of the earth as possible, as if he were going to transplant the tree, and then filled in the whole with fresh earth, and the result was that the tree wholly recovered. In the cases of pines and spruces the diseased plants are found to have the growing fibres covered with the silky or cobwebby spawn of the fungus, just as they are in the early stages of the peach tree yellows.

FIRE BLIGHT IN THE PEAR.—Reading a new work recently in which horticultural knowledge is professedly brought down to the present time, we find "pear blight" referred to in precisely the same language and terms as would have been in order over a quarter of a century ago. A dozen different diseases are all confounded as "pear blight," and it is quite evident that the great trouble "Fire Blight" was not at all understood by the author. The idea that fire blight is contagious or even infectious, is surely thoroughly exploded; and the advice to drop all other important work at once, and go to work at any cost to cut away and burn the "infected" tops, seems very strange at this late date.

We really believe that a number of our good friends among the professors of horticulture in schools and colleges, to judge by some of their professional work, are a long way behind the age, and a good course of reading through the horticultural publications of the past twenty-five years,

before putting their fancied discoveries into print, would be of great service to them.

FRUITS TO EAT OR FRUITS TO SELL. — The *Farmer's Home Journal* referring to our recent note on new fruits, makes the following good point in addition:

"To please the eye, is the aim of the fruit seller, and it is no longer an object to consider the quality and taste. Hence only those sorts are grown that will meet these requirements, and nurserymen have a demand for such trees and plants and vines as will produce fruit that suit the demand in the market. Fruit-growers and nurserymen thus co-operate in supplying such as will compete with transported fruits, and which will themselves bear safe transportation hundreds of miles to other markets. Thus quality is sacrificed to these commercial requirements. The amateur fruit-grower gives up his interest in fruit culture and drops out of competition with the market gardener. Horticultural societies fall under the control of professional fruit growers and nurserymen. Horticultural literature and essays all concentrate on the business aspects of the question and the old time enthusiasm for fruit culture for the love of it and for the glory of its honors has become a thing of the past."

TO CLEAN MEALY BUGS FROM HOT-HOUSE GRAPES. — Hot-house grapes often annoy the grower by having mealy bug on the stems in among the berries. A correspondent of the *Gardening World* tells the reader that he places the bunches under a strong hydrant, the force of the water being turned down the centre of course, and then rapidly dries the bunch; no injury to the flavor or appearance of the bunch results.

CLASSIFICATION OF APPLES.—Dr. Hogg, an eminent English pomologist regards the best characters for a classification of apples to lie in the depression or calyx basin, and the carpellary walls of the fruit—that is to say, the horny walls that enclose the seed in the core. The little tube at the base of the calyx basin, affords also good characters for distinguishing varieties he believes. Some of these tubes are mere semi-circular depressions, while others are long, slender and thread-like. The shining, horny walls about the seeds are sometimes almost circular. At other times very narrow in proportion to length.

THE PEAR AS A FAMILY FRUIT.—Whatever may be said of the pear as a profitable or unprofitable fruit for market, there is no doubt that it is one of the most reliable of all for family use. No tree takes care of itself so well. No class of fruits bear so regularly as the pear. This is the universal experience, and from time to time our exchanges furnish remarkable evidences of the truth of this. A recent issue of a Macon, Georgia, paper says:

"There is a pear tree in Montgomery County 87 years old, which has not failed to bear a crop of fruit in over 80 years. The tree was set out by Stafford Davis in 1798. The fruit resembles the sand pear in shape and flavor. The tree is six feet in circumference."

CLAPP'S FAVORITE PEAR IN EUROPE.—Our seedling pears and apples do not seem to become very popular in the old world, but Clapp's Favorite is fairly swimming along on the French popular tide. It is said to be there "a good, beautiful and excellent fruit," and they are actually talking of replacing the Bartlett (Williams' Bon Chretien) with it. The perfume of the Bartlett, which we think so agreeable, is offensive to the French.

THE MOST POPULAR ENGLISH APPLE.—For general popularity Lord Suffield is the most popular, followed closely, however, by the old favorite Ribstin Pippin. As a dessert apple alone, this has lost its old position on the top of the list, Cox's Orange Pippin now taking the lead. American varieties seem unknown in England.

LARGE PEARS.—At a pomological exhibition (apple show, they call it in the Old World) at Exeter, in England, a report says that in class twenty-five, six dishes, five fruits each, Sir T. D. Acland, Bart., was first, the sorts being Doyenné du Comice, weighing 5 lbs. 2 ozs.; Pitmaston Duchess, 6 lbs. 10 ozs., the two heaviest being 1 lb. 9 ozs. each. Both these sorts were, Mr. Garland said, from pyramid trees. The collection also contained Easter Beurre, Glout Morceau, and Winter Nelis, one of the latter weighing 10 ozs.

WILSON JUNIOR, BLACKBERRY.—Mr. Parry in 1870, selected plants of Dorchester and Wilson Early, and planted them together, far away from any other to mix with, trusting that the pollen of one kind might perhaps intermix with the other. In 1875, he selected some of the best Wilson berries for seed. After watching the fruiting seedlings for four years the largest and best was selected, and this is Wilson Junior. One acre of plants yielded in 1884, 110½ bushels of fruit. Mr. Parry is now trying actual cross-fertilization, by cutting out stamens with a scissors before they mature, and using pollen from other kinds with a camel hair brush, and has numerous seedling plants raised in this way.

THE REGENERATION OF THE POTATO.—Our European friends seem much exercised over the question of crossing the potato with some of the wild kinds found in Arizona, Mexico, and South America. But it strikes us that the good old potato is a long way yet from destruction. Some of the newer varieties are as good as any one at any time, and the crops raised are as heavy now as they have ever been in all potato history.

PRODUCT OF A SINGLE POTATO.—The amazing reproductive capacity of some insects is more than equalled in the vegetable world. The seeds in a single orchid capsule are capable of making millions of plants. The spores from a single Puff-ball might give Puff-balls to every square mile in the whole United States. Nature provides checks to the enormous increase which such plants are capable of. Man, however, can control the elements in some measure, and when he tries his hand at the removal of the obstructions, we see what plants can do. At a recent meeting of the Summit Co. (Ohio) Horticultural Society, during the discussion, Aaron Teeple told how Chas. C. Miller, of Akron, raised 1,677¾ pounds of the Dakota Red potato last year from a single pound of seed. The tubers were put under glass and several crops of sprouts taken. These were carefully transplanted, and when well established they were set out in the open air.

TOMATOES IN TURKEY.—The Tomato is being introduced into Turkish gardens, where it goes as the Red Egg plant. Everything American is respected in that country.

FORESTRY.

EDITORIAL NOTES.

FOREST FIRES.—The New York *Commercial Bulletin*, in presenting its usual monthly record of losses by fire, makes the following pertinent comment: "The fires keep up their ravages in a way that should compel attention of an antagonistic sort. It may be all very well to endure what cannot be cured. But this is not that kind of misery, since its cure is discoverable and applicable. And as long as carelessness almost criminal, and design, which actually is criminal, are allowed their own way in producing this enormous and increasing waste of national wealth, the evil will have to be endured, simply because there is no adequate attempt to cure it. Fires were bad enough throughout 1884, but 1885 is pretty certain to show something worse. April's fire record, as we estimate its results, will add $7,750,000 to the aggregate of the preceding three months, thus making $35,250,000 the amount of destruction by fire in the United States and Canada since January 1, or at the rate of $105,750,000 for the year if it is not checked. Our own files for April have contained record of 196 fires where the reported loss was from $10,000 upwards."

It is all very well to blame carelessness and design for starting forest fires, but the contributory negligence that permits piles of dead brush to lie around loose waiting for carelessness or design to come along and fire the material, is surely as culpable.

EDUCATED FORESTERS.—In America we sometimes ask, what shall we do with our girls? Sir John Lubbock says in England the question is, What shall I do with my son? He answers the question, that they should learn a little about forestry, and then become Government Forest Commissioners at $4,000 a year.

DRAINAGE FOR TREES.—The necessity for good drainage for trees as well as for flowers is well illustrated by Californian experience. In many places the soft surface soil is only about a foot deep. Then there is "hard pan" about 14 or 15 feet, then gravel. If a hole for a tree is made two feet deep, the tree may as well stand in a bucket of water. Such trees die or get sick. But when a hole four inches wide is bored through the hard pan under the trees to the gravel, the trees thrive amazingly. They grow like magic.

FOREST FIRES.—Slowly the public mind is awakening to the fact which we have long endeavored to impress, that the true remedy against forest fires is to proceed against those who leave dead underbrush lying loose around. The *American Architect* now says:

"Against animated incendiaries a forest patrol might be tolerably effective, but it would be still more useful to provide in some way for the removal of underbrush from woodland. Trees by

themselves are not easily kindled, and the mischief is usually done through the ignition of dry leaves, ferns or bushes, which burn long enough to char, and at last to kindle, the branches of the trees above them."

The only attempt to overrule this point that we have seen is in a learned "Forestry essay." The author says "to ask the Legislature to insist that the owner of a ten or twenty thousand acre timber lot clear out all his dead underbrush would be the height of absurdity." Of course it would, but who asks to have this done? What we would insist on is that the owner of such a tract should be compelled to clear out a quarter of a mile in from the boundary of his neighbor's property. No matter how much might burn, he should be prevented from permitting it to spread to his neighbor.

A One-leaved Yellow Locust.—The *Revue Horticole* says that a variety has been raised in France, which, instead of being pinnate, and composed of numerous leaflets, as in the normal form, has an undivided leaf—all of one single leaf-blade. It must have a very unique appearance.

Growth of Timber in Rocky Land.—People often have an idea that rocky ground is poor ground. On the contrary, it is very rich from the vegetable accumulations which get between the crevices and cannot be washed away. Prof. Maynard recently told the Massachusetts Horticultural Society, that probably all present could recall instances where the native white pine, the Austrian and Scotch pines, the Norway spruce, the larch, the elm, maple, ash and other trees have been planted in turf and have made a satisfactory, and in some cases a remarkable, growth. One or two examples will suffice to illustrate this point. Upon a poor, gravelly hillside on the college farm at Amherst, where nothing but brambles and white birches would grow, were planted ten years ago a lot of European larches and Scotch pine trees, about two and a half feet high. The trees were taken from a nursery about half a mile distant, one squad of students digging them while another squad were planting. The holes were dug about fifteen inches in depth and eighteen inches in diameter, and after planting the trees the soil on the upper side of the hole was moved to the lower side to form a basin to catch the water as it ran down the slope. Nothing was applied in the way of additional fertilizing material, but the surface soil was used first about the roots, and the subsoil spread upon the top. Excepting about a dozen trees, all lived, and after about two years began to grow rapidly. One of the larches was cut from this lot last fall for a flagstaff for the barn at the experimental station, and was thirty feet long, seven inches in diameter at the base, and two and a half inches at the top. Many of the larch trees are larger than this, and will average about thirty-eight feet high, and six inches at the base. The Scotch pines planted at the same time and on the same soil have not reached as great height, but are of greater diameter and have made more branches. Had a mulch been used after planting, or a little bone or some other special fertilizer been added, the growth would have been much more rapid the first two years, and they would now be larger, as is shown by a few trees from the same lot that were planted in equally poor soil, but were mulched and have had a few shovelfuls of compost put around them at different times. One of these larches now measures eleven inches in diameter at the base, and is forty feet high, and there might be cut from it three lengths for posts—one large stick eight feet long, that can be sawn so as to make two posts five and a half inches thick at the base and three and a half inches at the top; one round post seven inches thick at the base and five inches at the top; and one good vineyard post, the whole worth at least fifty cents per tree. Reckoning the value of each tree at one-half the above, and estimating a thousand trees to the acre, we have a value of $250 per acre.

Spanish Moss.—This well-known product of the Southern forest is used to stuff mattresses, and is an extensive article of commerce in this trade. The pulp used to be taken off by rotting. Now a process is in use by which it is ready for market in twenty-four hours. It is then jet black, resembling horse hair. Botanically it belongs to the pineapple family, and is Tillandsia usneoides.

Succession of Forest Growths.—One of the most interesting studies connected with forestry is the succession of forest growths. It is a common observation that when a forest disappears it is generally replaced by one of a different species. Close observers, however, note that there is a great regularity in the sequence—so great, indeed, as to take the events out of the channel of a mere struggle for life, and to place them in the great chain of foreknowledge and design, which is now becoming more and more perceptible to the scientific mind. There is a struggle for life in which the weaker is displaced; but the conqueror could never have conquered, or have maintained the conqueror's hold, but for his victim having had a footing before him. In the Rocky Mountains of Colorado, the first tree to take possession of the rocky heights is the aspen poplar. No other tree attempts possession of the sterile soil. No sooner, however, does it spread over the wide acres, than the twisted pine (Pinus contorta) rushes in, contests the ground, and finally conquers. No sooner does it claim the ground for itself than various species of fir appear; and before the cycle closes we have forests of fir only where once nothing but aspen clothed the ground. The subject is still more interesting in those parts of the world where deciduous trees prevail, because of their greater number and variety of species. Hansen has recently contributed to *L'Exploration*, a paper on succession in Danish forests. There, as in our Rockies, the aspen first stakes its claim on land no other tree cares to occupy. It scarcely begins to flourish, however, before the birch envies it the possession, and drives it out. If the oak then has a chance, it will drive out the birch. The beech then follows, and challenges the oak, which has finally to succumb. The beech, indeed, is "the terrible child" of these Northern forests. It will not begin any warfare with the barren rocks for subsistence; but it contests the ground won by other species, and beats the original owners every time.—*Independent.*

Natural History and Science.

COMMUNICATIONS.

FRAGRANCE.

BY A. W. HARRISON.

Among all the harmonies of nature, those which afford the most universal delight, which are appreciated and enjoyed by the most lowly as well as the most refined, are the accords of fragrance, the harmonies of sweet odors. That these harmonies are governed by laws as fixed and beautiful as those that rule the play of colors in the prism, or the vibrations of sound and the musical scale, is a thought that suggests itself to the inquiring mind. Yet while the latter have been the subject of profound study for ages, and have engaged the earnest thought and experiment of the artist and the man of science, but little has been done to discover the principles and from them to deduce the laws which govern the actions and the relations of those intangible, ethereal odors that affect, pleasurably or offensively, the olfactory nerve; that fill the air we breathe; that give their peculiar savor to the fruits, the viands, the beverages we consume; that form an ever present feature of our daily life.

Perfumes are derived from a great variety of sources, which were arranged by Mr. Eugene Rimmel, of London, many years since in groups of ten different kinds in the vegetable world, and one in the animal kingdom, which I will briefly enumerate:

1st. Leaves of flowers, as Rose, Violet, Jessamine, Orange Flower, and many a score beside.

2d. Herbs, as Lavender, Rosemary, Thyme, Sweet Marjoram, Peppermint and others.

3d. Leaves of trees and plants, such as the Lemon Verbena, Citronella, Ginger-grass, and the Bitter Orange tree, whose green leaf yields the oil of Petit-Grain, a useful constituent of Cologne water.

4th. The skin of fruits like the Lemon, Orange, Bergamot, Limette and Cedrat.

5th. Spices, as Cinnamon, Cloves, Mace, Nutmeg and Pimento.

6th. Woods such as Sandalwood, Cedar, Rosewood and Rhodium, and the bark of roots, as Sassafras and Sarsaparilla.

7th. Roots, as Orris-root and Vitivert.

8th. Seeds, as Aniseed, Carroway and Celery.

9th. Resins and gums, as Balsam of Peru and Tolu, Myrrh, Benzoin, Styrax, Camphor and other gums.

10th. Fruits and nuts, as Vanilla, Bitter Almonds, and Tonquin Beans.

The chief animal perfumes are Musk, Civet and Ambergris.

The Orange tree furnishes four different perfumes, all highly fragrant: first, the oil of Neroli, or Orange Flower, distilled from the petal of the

Orange blossom; then Orange Flower water, next the oil of Petit Grain, from the green leaf of the tree, and last, the oil of Orange, expressed from the peel of the ripened fruit. These are all indispensable for the production of the finest quality of Cologne water.

The three elements of floral beauty are color, form and fragrance. The flower which combines these elements in the highest degree is the Rose, which has been regarded, from all time, as the type of all that was most delightful to the smell and most charming to the eye. Its perfume combines, in various and harmonious proportions, with a greater variety and numbers of odors than any other elementary fragrance, and may, perhaps, prove to be the key-note of the future gamut of odors.

Next in value is the Orange Flower. Its scent is powerful, pervasive, and universally pleasing to to the cultivated sense. It may fitly represent the fifth or dominant of the scale.

For the third, or mediant, we might select the Vanilla, and so on to the formation of the perfect scale.

As yet, however, science has thrown but little light upon this theme, and we must be content with mere conjectures which, if time shall prove them unsound, may yet serve as guide-posts on the true road to a knowledge of what is now only an interesting, mysterious and perplexing problem.

In the domain of sounds there are some discords so harsh as to shock even the dullest ear. So, in the realm of odors, we sometimes experience sensations of displeasure and disgust that cause even the bluntest nature to revolt against them. All these arise from violations of the great law of harmony, which governs the universe and rules the spheres.

On the other hand, a combination, in true accord, of pure, sweet sounds, a harmonious blending of the rich, fresh odors of the living world in garden, orchard and in grove, bring never-failing delight to the highest organs of our being; they soothe and refresh the wearied body and the exhausted mind; they bring happiness to the humble, and the most refined pleasure to the man of culture and the votary of art.

As I shall treat this subject mainly in the light of practice, and in its relations to commerce and the arts, I will not dwell longer upon this train of thought save to suggest the lesson which as horticulturists and florists, we may learn from an honest study of the odors of flowers, and to point out some interesting facts which have resulted from chemical research into the odors of plants.

In the preparation of hand bouquets, baskets, table designs and every form of floral grouping, while great attention is paid to the pleasing contrast of color and form, the graceful disposition of leaflet and flower, the well-proportioned outline, and the artistic ensemble, there would seem to be a comparative neglect, perhaps an absolute ignorance, of those principles which govern the harmonies of odors, and of that use of the means at our command, which shall complete and crown the enjoyment properly afforded by these charming combinations of Flora's offspring.

At times the most discordant elements are introduced; flowers yielding a perfume pleasing in itself, and combining happily with others of the same type and family, are placed beside those of a widely different and opposing nature; a harsh contrast ensues, and the result is displeasing to the cultivated sense. Let us study this feature more carefully and let not the true intent of the *nosegay*, to refresh and to delight the sense of smell, be lost sight of; but let fragrance of the highest type, whether simple or composite, be a distinctive, if not a leading feature in these beauteous decorations of our homes, and in the adornment of our festive scenes.

I have spoken of the Rose as the highest type of fragrance. There are several other odors, mostly quite different from each other in character, which combine harmoniously with the Otto or essential oil of the Rose, and in any desired proportion; such are the odors of Sandalwood, Patchouly, Turkish Geranium, Vitivert, the Rose Geranium of our garden, Rhode-wood, Sweet Brier and some others. The Orange Flower, too, has its kinsmen in the Lilac, Magnolia, Seringa, Daphne, Hawthorne, and many more that will suggest themselves to the experienced lover of flowers.

Of a different class, but nearly related in fragrance, are the Lemon Verbena, the Citronella, Lemon-grass, and the fruits Lemon, Orange, Bergamot, Cedrat and Limette.

In a recently issued book, entitled "Among the Spanish People," the author tells us that the Lemon Verbena is collected and stored for winter use. It is said to form one of the finest stomachics and cordials, and is either made into a decoction and drank cold with water and sugar, as a tonic, or with the morning and evening cup of tea. A sprig of five or six leaves of it is first put into the cup, and the hot tea poured over it. By using this, it is said, "you will never suffer from flatulence, never be made nervous or old-maidish, never have cholera, summer complaint, or loss of appetite. Besides, the flavor is simply delicious; no one who has once had his Pekoe with it, will ever again drink it without a sprig of Lemon Verbena."

Again the distinctive odor of the Vanilla Bean suggests itself in the Heliotrope, Gum Benzoin and Tonquin Bean; the latter, of very inferior quality, is largely used to adulterate and cheapen the extracts of Vanilla, so largely used in the household, and by cake-bakers and confectioners. The flavoring principle of the Vanilla Bean is called vanilline; in the best quality it is often seen in minute frost-like crystals on the surface of the bean, giving rise, in French, to the name "Vanille givrée," or Frosted Vanilla, and such beans command the highest price.

The Tonka Bean contains another odorate principle called Coumarin, which is also the dominant odor in our Sweet Clover and Vernal Grass, and plays a leading part in the composition of the perfume called New Mown Hay.

I have said that the laws which govern the relations and combinations of odors are as yet undeveloped; yet, in the practice of the art of perfumery, some truly delightful harmonies have been produced, the result of a naturally keen and delicate sense of smell, refined by long culture and intelligent devotion to the art.

As the musical composer with only seven simple tones and their five semi-tones for his materials brings forth the grandest combinations of choral harmony, and as the painter, with a few simple, primary pigments, embodies his highest conceptions of beauty on the painted canvas, so does the perfumer, with a few simple, elementary odors, arranged and combined in accordance with a law of beauty unwritten, yet deeply felt, produce an endless and ever varying round of fragrant harmonies. To him the simple, sweet-scented flower is only a vehicle for the communication of odors to the nostril and the brain. By means of the olfactory nerve he analyzes it, as the composer with voice and ear, analyzes a musical score, or the chemist a mineral compound. Like them, too, he composes and combines; and from out his copper still, and the alembic of his brain, there come forth compounds of beauty that seem due to an almost creative power, so wonderfully fragrant, so strikingly resembling the flower they counterfeit.

To him the apparently simple odor of the Heliotrope resolves itself into the elementary odors of the Rose, Jessamine, Orange Flower, Vanilla Bean, Orris-root, Balsam of Peru, Clove, Cinnamon and Bitter Almond; by a skilful combination of these odors in their due proportion, the fragrance of the flower is imitated to perfection.

In like manner the sweet and delicate scent of the Mignonette (a French name for My Little Darling) suggests the perfumes of the Sicily Orange peel, Acacia, Tuberose, Jessamine, Violet, Vanilla, Gum Storax and Orris Root.

In this way the perfumer with his pallet (if I may use the phrase) of simple, elementary odors, reproduces all the fragrant combinations of the world of flowers, and adds to them other harmonies, purely ideal, which "like a thing of beauty are a joy forever."

Much interest was excited, some thirty years ago, by the lectures given before the Royal Horticultural Society of London, by Mr. Eugene Rimmel and Dr. Septimus Piesse, on the materials and processes of the perfumer's art, illustrated by the plants producing them, the apparatus employed and the method adopted for obtaining and refining their essential principles or elementary odors.

The animal world, too, was represented in the curious, powerfully-scented tumor of the Musk Deer, the resinous exudation of the Civet Cat, and the granular hemorrhoid of the Sperm Whale, known as Ambergris.

But the chief interest of these lectures was in their descriptions of the flower farms of Southern France, which are the principal sources of supply of the finer odors used in the perfumer's art throughout the world.

I visited the prominent seats of these manufactures and made careful examination of the leading establishments, and will now give you the chief results of my inquiries and observations in 1853. At that time I was an entire novice in horticulture and was interested only in a commercial way in

THE FLOWER FARMS OF FRANCE.

The growing of plants and flowers for use in perfumery, medicine and culinary art, is a most important branch of horticultural industry in that part of France bordering upon the Gulf of Lyons and the Mediteranean Sea, and especially in the southern portions of the Departments of Var and Nice. There are extensive establishments in Nismes, Montpelier, Morbihan, Nice and some then just founded across the sea in Algeria.

But the great centre of this branch of industry is the town of Grasse, about 75 miles E. N. E. of Marseilles, a few miles inland, its seaport Cannes,

the former winter residence of the late Lord Brougham, and its neighboring seaport, Nice. There are over 70 factories in Grasse—which is a flourishing town of over 12,000 inhabitants—and they give employment in the various departments of field and in-door labor to fully 5,000 persons. In Cannes and Nice there 30 more factories of the same class.

Many manufacturers grow their own plants and flowers, others buy them daily in the market, and still others are supplied by contract. The latter system prevails among the best houses. Contracts are made at a fixed price for a term of years, for the total product of a farm. The average price, stated in American currency and weight, was about as follows per pound—

Rose leaves	4 to 5 cents.
Jessamine leaves	20 to 25 "
Orange Flower leaves	25 "
Acacia buds	30 to 40 "
Tuberose leaves	50 "
Violet leaves	40 to 60 "

The latter are grown in the shade of groves near Nice.

These are the principal garden flowers used in Grasse. A great breadth of land is devoted to Lavender, Rosemary, Thyme, Sweet Marjoram, Cherry Laurel, Sage, Balm, and other medicinal and culinary plants, which are sold at much lower rates than the products of the flowers above-named. The preparations from all these plants and flowers divide themselves into four classes; Essential Oils, Distilled Waters, Floral Pomades and Oils, and Dried Leaves and Flowers.

(To be concluded.)

COMMON NAMES OF PLANTS.

BY R. THOMSON, JR.

I was induced to refresh my botanical (local) lore by reading the query to our good Editor, to see if I could help him out, but I failed in every instance but one; yet I came across so many names just as ridiculous that I offer them for what they are worth, *i. e.* nothing, only as a probable guide to some in making out orders:

Botanical Name.	*Local Name.*
Aletris farinosa	Colic Root
Asclepias tuberosa	Pleurisy Root
Calochortus elegans	Butterfly Tulip
Chelone glabra	Snake Head
Claytonia Virginica	Spring Beauty
Coptis trifolia	Gold Thread
Dicentra Canadensis	Squirrel's Corn
" cucullaria	Dutchman's Breeches
Esquisetum arvense	Common Horse Tail
Hypoxis erecta	Star Grass
Liatris spicata	Spiked Blazing Star
Mimulus ringens	Monkey Flower
Mitchella repens	Partridge Berry
Nardosmia palmata	Sweet Colt's Foot
Scutellaria galericulata	Skull Cap
" lateriflora	Mad Dogs
Andromeda Mariana	Stagger Bush
Kalmia angustifolia	Sheep's Laurel
Kalmia latifolia	Calico Bush
Lindera Benzoin	Spice Bush
Aristolochia Sipho	Dutchman's Pipe
Sarracenia purpurea	Huntsman's Cap
Saururus cernuus	Lizard's Tail
Symplocarpus fœtidus	Skunk Cabbage

Spartanburg, S. C.

[The names here given are not merely local, but are accepted common names; yet even here there may be trouble, for Aletris farinosa is called Star Grass as well as Hypoxis stellata, and the poor florist would not know which of the two to send if he should get a Star Grass order.

We should be very glad if our correspondents would from time to time contribute notes on local names of plants, for common names are very desirable when they really are common. No one would want to talk of their beds of Viola tricolor when they had the Pansy in mind, nor of Dianthus barbatus in a chat on the Sweet William. It is the utter recklessness with which anybody or everybody has lately claimed the right to start a name of their own as a common name long before it is common or even local, to the utter confusion of everybody, that is condemnable. As in ancient Babel, nobody knows what the other is talking of. If by common acceptance names are widely known locally, we shall indeed be very glad to have notes of them. We do not want a name sent to us because Mr. this or Mrs. that calls it so.—Ed. G. M.]

EDITORIAL NOTES.

SELAGINELLA INVOLVENS VARIEGATA. — The cause of variegation or the green parts of plants blanching is not clearly made out. When it comes to a question of a plant growing in darkness, we say in explanation it is for want of light, that light gives the delightful green color to vegetation. But this explains nothing. When we see plants growing in full light, with part green and part as colorless as if growing in darkness, we can understand that it is not darkness in itself that blanches vegetation, but something that accompanies darkness, and which can and does exist at times even when light abounds.

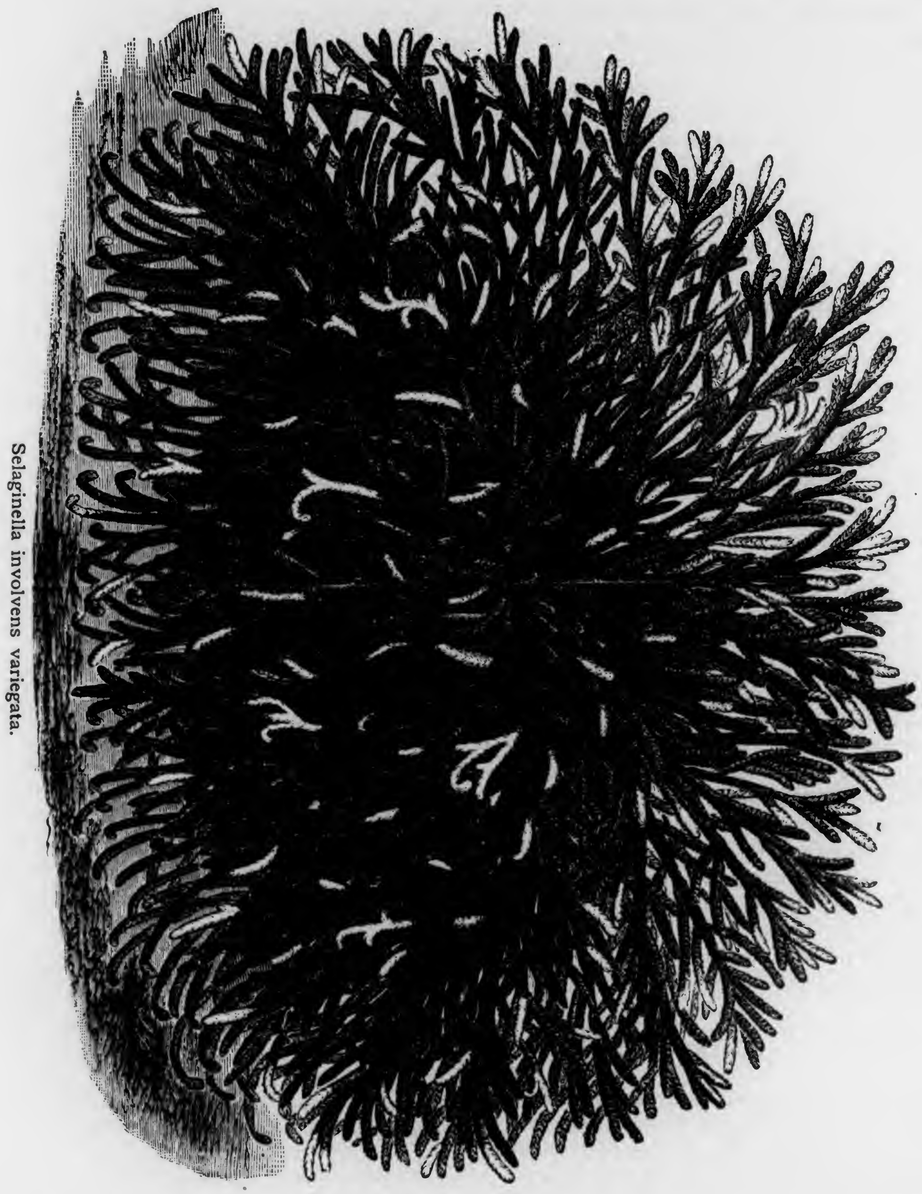
And it is further worthy of remark that white variegation is found more frequently among the flowering plants than among ferns and lycopodiums, and we may infer from this that whatever may be the cause of the absence of the green coloring matter, that cause is less operative among the lower than the higher classes of plants.

It is by obvervations such as these that some one some day may render good service to intel-

lectual pursuits by developing the whole method by which nature is enabled to give us so many beautiful things in this line.

Wm. Bull, who furnishes us with the following facts connected with its history:

"A dwarf dense-growing variegated form of



Selaginella involvens variegata.

Aside from such thoughts which this variegated lycopodium suggests, it is a plant of very great beauty. It was brought to our attention by Mr. greenhouse club-moss, introduced from Japan; some of the branchlets, instead of having the ordinary green color, are creamy white, and these

being mixed in freely with the green branchlets, produce an elegant variegation, similar to that which occurs in some of the finely-branched coniferous plants, such as the retinosporas. The plant forms a pretty dwarf tuft, consisted of an overlapping series of flabellate or dichotomously-forked branches, surrounding the central axis. A well-grown specimen is a very pleasing object amongst the dwarfer hardier forms of the club-moss family." This was one of the twelve new plants with which Mr. W. B. gained the First Prize at the Royal Horticultural Society's Exhibitions, in 1880, 1881 and 1882.

HONEY DEW.—A very interesting fact has recently been developed in connection with the production of the sweet secretion known as honey-dew, on the leaves of plants. That leaves are often coated with this substance through the excretions of aphides is well known. A large number of observers write of honey-dew as wholly the product of these insects. Another portion contend that it certainly does occur frequently where these insects are not present; and hence we read that "honey-dew is often a secretion from the foliage of plants." No doubt this is the case sometimes. There are cases on record that would seem to admit of no other explanation. But it is now found that sweet secretions are emitted from scale insects in such great profusion as to cover pavements with the drip from them, in a single night. Professor Cook gives a detailed account of some of this work of the scale, and its connection with bee culture, in *Science* for January 23d. One case of honey-dew noticed on camellias, where certainly aphides were not present, is often referred to in scientific treatises, to show that it is a leaf-secretion; but these plants are a favorite with species of coccus, and it is not at all impossible that, not suspecting the agency of these insects, they were overlooked when the aphides were found to be absent. The fact now stated will lead to an opening of the whole honey-dew question again.—*Independent.*

SCRAPS AND QUERIES.

ORIGIN OF THE NAME GOOBER FOR THE PEA NUT.—Dr. C. W. Greene says: "Monteiro, in his work on 'Angola,' tells us that the natives of that part of Africa give to the common pea nut the names 'ginguba' and 'mpinda.' The similarity of these names to the American names of the same plant ('goober' and 'pindar,' otherwise 'pindal' or 'pienda') is very obvious. Which forms are original, the African or the American? A correct answer might help us in determining the native habitat of the plant."

BUD VARIATION.—"H. B. H.," Oakland, Cal., writes: "Your answers to correspondents are very interesting indeed to us, and we find our own experience described very often exactly in them. In your May number you quote as authority Mr. Darwin in reference to cross fertilization. We are frequently much perplexed in this matter and must admit that we often find evidences of mixed or blended colors in cuttings or slips raised from old plants. I have reference to carnations. I have in my mind now several instances, more particularly in buffs and yellows. Is it a fact confirmed by the experience of carnation growers that, 'plants propagated from cuttings, slips or in any way other than from seed, retain the individuality of the parent plant;' or do they not sometimes show other colors than those of the parent plant? With all due respect to Mr. Darwin's authority I should be very much pleased to hear from the growers themselves—who have occasion to notice these things practically—and, as your valuable journal shows in each and every number, they are willing to give the world the benefit of their experience."

[Mr. Darwin, in common with most scientific men, had to "live and learn." He collected all the facts that were known in his time, and, if we know more now, that in a great measure comes from the spirit of investigation which in a great measure his good work excited. As to the cause of variation Mr. Darwin never, that we know, undertook to explain. But the fact of variation being assumed and which no one can deny, he showed how what we call species came into existence—chiefly by the dropping out of intermediate forms, which then became "missing links." His postulate that "plants propagated from cuttings retain the individuality of the parent plant," is not so strong now as it was in Darwin's time. What is now known as bud variation is found to be much more common than it was once thought to be. Still, as compared with variation from seed it may still be accepted as a general truth, that plants retain their individuality from cuttings, though we admit many exceptions.—Ed. G. M.]

FRUITING OF THE SALISBURIA AT LEWISBURG, PA.—Prof. Geo. G. Groff sends us specimens of fruit from a tree at Lewisburg. He has never seen aments on it. Another tree about 100 yards away bears aments, but he has never seen fruit on it. These trees therefore, seem to be dicœcious, as the books on coniferæ describe the species to be. It still leaves the cases of isolated trees bearing fruit in doubt. Does the plant really have male and female blossoms on the one tree sometimes? Or is the pollen wafted from long distances as pine tree pollen often is?

THE HOLLYHOCK DISEASE.—J. C. Arthur, New York Agric. Exper. Station, Geneva, N. Y., says: "There is no record of the hollyhock disease caused by Puccinia Malvacearum occurring upon any cultivated plant in America, and is only reported upon wild plants in Kansas and California. The latter, moreover, may prove upon further observation to be distinct from the European species. It is a matter of interest, therefore, as to what fungus is referred to in the June number of the MONTHLY as being very destructive to hollyhocks; it is pretty certain that it is not Puccinia Malvacearum, as supposed. The writer will gladly examine and report upon any specimens sent him."

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

INTERESTING PLACES.

BY WM. T. HARDING.

After perusing the well arranged spring catalogue of select hot-house, greenhouse, hardy and new plants, received from David Fergusson & Sons, Laurel Hill Nurseries, Philadelphia, I felt the strongest inclination possible to go at once and see them growing. And in fact so much was I impressed with the desire that I willingly yielded to the alluring temptation held out and was soon among them.

"Great Expectations," alas! are not always realized in this deceptive world, yet, on this particular occasion they certainly excelled all my fancy painted them. And how highly gratifying it is to the observer who is diligently looking out for something good, when agreeably confronted with that which he is in search of. And this was the happy experience of your correspondent, when on the fourth day of "Smiling May" he entered the land of perpetual summer, where from distant regions were gathered gorgeous groups of the brilliant bon ton tropical beauties, in all the varied phases of leaf splendor and blooming grandeur that could possibly assemble beneath canopies of glass.

It is wisely said, "He shall best paint them who shall feel them most." And true as the assertion may be, the writer, with all his ardent admiration for such beautiful things, is nevertheless compelled to admit his lack of adequate language utterly unfits him to properly depict the grace, elegance, radiance and fragrance, which combined to render all so charming. To specify all that is interesting would be impossible, and especially so when every object seemed worthy to be designated admirable. And could sufficient space be spared to fill several columns with the mere names of the numerous grand specimens, it would not satisfy the patient readers without fully describing them. So, "for sweet charity's sake," I trust they will pardon me for not making the attempt. Suffice it to say that in every department under the sashes, as well as the grounds outside, everything was excellently done. The same remarks apply to the bouquet rooms, potting sheds and packing house, where a number of active hands were busily engaged in filling orders.

As instances of marked improvements in old favorite flowers were frequently pointed out, and the merits of new species discussed, while inspecting this unique establishment, the thought naturally suggested from what I saw about me was, what an excellent place it is to demonstrate floricultural progress in. And as the last door closed of the many plant houses we passed through, I felt fully convinced with the fact that the catalogue's descriptions of the beautiful things I had carefully inspected were not in any sense exaggerations.

Butler, of "Hudibras" fame, might have been similarly impressed with what he saw in his day, when he penned the following lines—

> "How fair and sweet the planted rose
> Beyond the wild in hedges grows!
> For without art the noblest seeds
> Of flowers, degen'rate into weeds."

After several well spent hours in the nursery, Mr. T. Fergusson kindly proposed taking a quiet

ramble through the sylvan shades of Laurel Hill Cemetery, so picturesquely situated within a few yards of the enterprising firm I was visiting. So under his efficient guidance I was musingly led along the silent avenues and peaceful paths which intersect "the city of the dead." Among the beautiful and symbolic designs of costly monumental statuary grew many stately trees, handsome shrubs, lovely flowers, and the greenest of green grass, beneath which the silent sleepers lay.

While looking at the many marks death had made around us, I thought how suitable seemed the words of a meditative man: "Poor things, they vexed themselves about very small matters while they were alive, but they are all at peace at last."

On alluding to the great injury the past severe winter had done to some of the evergreen shrubs in exposed situations, especially to the native Rhododendrons and hardy Box bushes, my companion remarked, "You will be much surprised with what I am about to show you further on." And indeed I was, when he pointed to a sturdy Azalea indica alba, three feet high and four feet across, almost ready to burst into bloom. To my great astonishment, this beautiful oriental shrub had stood there without any protection for the last ten years, and seemed as hardy in the occident—like its pretty little congener A. amœna; and, as are the charming Ghent varieties. Of course the poetical Hawthorn, the singular Gingko, and interesting Cedar of Lebanon trees, were too conspicuous to pass unseen.

After viewing the very remarkable work of sculpture, considered the masterpiece of the famous artist, Thom, known as "Old Mortality," which the genius of Scott has rendered immortal, we meandered among the well kept burial lots, until we reached one at which my guide paused, and pointing to a grave on which was placed a mass of fresh flowers, remarked, "That is where father is buried." As a passing tribute to departed worth, I will here say, that he who slumbered there, the late Mr. David Fergusson, who has "passed through the golden gate," was as noble a man I verily believe, as ever left "Bonny Scotland;" and was for years a sincere friend of the writer. And while deeply regretting his loss, the remembrance of other days vividly reminded me of vanished friendships never to return. And as our friends thus drop off, one by one, we realize the truth of the sad aphorism, "The shadow of the cypress will be cast over all."

Mount Holly, New Jersey, May 23rd, 1885.

EDITORIAL NOTES.

THE DUKE OF WESTMINSTER'S GARDEN.—Eaton Hall is one of the most beautiful ducal palaces, and has one of the most interesting gardening establishments in England. The gardener has fifty-six men employed under him. The number of glass houses is so large that the employees generally cannot tell you without stopping to count on the fingers how many there are. The hot-water pipes to warm these houses in length would extend six miles. Strawberries are forced for winter use, about 6,000 pots being used for the plants. Ten thousand persons visited the grounds last year. In order to keep down crowds, the Duke charges 25 cents to each person visiting the palace and grounds. The receipts are given to a hospital in the vicinity, the sum last year being $2500.

MUMMY PEAS.—The modern Egyptian is nearly as good as Ah Sin, when playing the game of "Fleece your brethren." Employ one to get you some mummy peas at a big figure, and he will get you the mummy and carefully unwrap its rags, when lo! and behold! you may see the peas roll out before your eyes! The delighted Yankee or Britisher smilingly carries home his prize and plants them. It is nothing to him that it is but the modern purple flowered bush pea, seeds of which he could get anywhere for a few pennies. These came from an "old mummy, you know."

P. B. HOVEY.—The founder and senior partner of the well-known seed firm of Hovey & Co., of Boston, died at his home in Cambridge on the 3rd of June, in his 81st year. He was born, in the house where he always lived and died, on 3rd of September, 1803. In 1834, he started the seed store at Cornhill, now at 16 South Market. Mr. Hovey left the seed firm in 1883, but continued till his death his interest in the Cambridge greenhouses. He was among the early founders of the Massachusetts Horticultural Society under General Dearborn's Presidency, in 1829, and had been its Vice President, and active in many official capacities. He served two terms as a member of Common Council in the city of Cambridge, and was a remarkably useful man in every relation of life, and highly esteemed by the whole community in which he lived. Mr. Phineas Brown Hovey, leaves a widow and three children. They, with his esteemed brother, Charles M. Hovey, will receive the sympathies of the whole horticultural community in whose service their long lives have been so ably dedicated.

THE CANADIAN FORESTER'S ILLUSTRATED GUIDE.—By J. C. Chapais, Montreal. Eusebe Senecal et Fils, publishers. 1885.

The object of this work is to make Canadian farmers and others acquainted with the trees composing Canadian forests. Accurate drawings of the trees, branches and seeds are given; all this must have great value. The author gives his view of the "Duties of the Government." No government forests "unfit for cultivation" should be sold to settlers; but if the land will produce good timber it is not clear why it should be unfit for cultivation. Then he thinks no person should be allowed to cut any tree that does not exceed a certain size. When forest land is sold, the settler should be obligated to keep a certain acreage in forest. Sportsmen must be watched, that is, special police must be employed. For the encouragement of reforestation, he thinks premiums should be given by agricultural societies or even the government. In every way possible he would teach farmers their interest in forest planting. As to the prevention of forest fires, Mr. Chapais is the first writer we have met with who insists that the owners of forest lands should be compelled to clear away the debris left by the woodman, or at waste in the forest. He would have the woodman's work finished by fire in the winter season, and prohibit all burning of brush between the first of June and the first of October. Just how this would work we do not know. It would be very hard work to collect dead material properly when snow is on the ground. Still it is in this line that we have to look for relief from forest fires.

THE JESUP COLLECTION OF WOODS OF THE UNITED STATES.—By Prof. C. S. Sargent. New York: D. Appleton & Co.

Morris K. Jesup, the President of the American Museum of Natural History, New York, collected specimens of all the woods of the United States, and submitted them to Prof. C. S. Sargent to arrange and elucidate. Only a few have not yet been secured. This work by Prof. Sargent is intended as a guide to the collection. Life-size colored drawings are still in preparation. It gives an account of everything relating to trees as wood that can be ascertained, so far as they are trees of the United States, and is undoubtedly the most intelligent contribution to dendrology that has ever appeared in our country.

GRAY'S BOTANICAL TEXT BOOK. — Professor Gray's Text Book went through five editions under the sole supervision of the author. When the sixth was called for botany had so far advanced that Dr. Gray had to commit portions of the work to other hands. It was divided into four volumes, first, Structural Botany, from his own pen, and which appeared several years ago. Sketch of the natural orders, which we hope he will yet give us. Cryptogamic Botany committed to Professor Farlow's care; and Physiological Botany by Professor Goodale. The last is to be the second volume, of which part the first is now before us. When complete it will be probably the most popular Text Book of Botany that has appeared in any country.

FIVE ACRES TOO MUCH.—By Robert Barnewell Roosevelt. Orange Judd Company, New York. New Edition.

When "Ten Acres Enough" appeared many went wild over the enormous profits supposed to be made out of a few acres of ground, and thousands lost about all they had saved in trying to do what the author of that work said had been done. They had certainly enough before they got through. This book is a capital take-off of the extravagances of that ten-acre affair, and the fact that a new edition is called for shows that it is well appreciated. We do not know of a pleasanter book to while away an hour in a garden chair.

MUSHROOMS OF AMERICA: EDIBLE AND POISONOUS.—By Julius A. Palmer, Jr., Boston: Published by L. Prang & Co. 1885.

There is no more universally appreciated vegetable than the mushroom. A very large number of species are edible. But numbers of species are poisonous, and the fear of eating the noxious species prevents people from using numbers that may be collected near every one's door. Messrs. Prang could not have undertaken a more useful work than to give full sized colored illustrations of all of these classes, so that even a child may learn what to choose and what to avoid. Aside of the utility of the task, they are beautiful works of art that will be welcome to any one's library table. They are not too large to be inconvenient, but are each species printed on card-board by itself, and all in a portfolio. They can thus be used for lectures or parlor talks, and are just the thing for use in schools or colleges.

FRUIT CULTURE.—By W. C. Strong. Boston: Houghton, Mifflin & Co. 1885.

Numerous works have appeared from time to time on fruit culture and kindred topics. One would think there was no room for more. But in

no branch of intelligence has there been so much advance as in horticulture. Every year solves problems insoluble before, and with new ideas new books naturally follow. It is just in this line —in the endeavor to elucidate fundamental principles—that Mr. Strong believes he finds an unoccupied field, and this book is the result. In the peculiar field it is destined to fill it will be found very useful. If it had been more pretentious, there would be room for more critical comments, as, for instance, the statement that pear leaf blight is confined mainly to young seedlings, before they are budded by the nurseryman. This may be correct of some of the New England States. In many other parts of the country the main cause of pears not ripening well, and of the poor flavor when they do ripen, comes from the premature fall of the foliage from leaf-blight.

ORCHIDS: A REVIEW OF THEIR STRUCTURE AND HISTORY.—By Lewis Castle. London: Published by Journal of Horticulture office.

This is a small paper-covered book of 56 pages, by the author of "Cactaceous Plants," recently noted in our columns. It brings together a great mass of matter connected with the history of these curious plants that cannot fail to interest any person who knows what an orchid is.

TALKS AFIELD ABOUT PLANTS AND THE SCIENCE OF PLANTS.—By L. H. Bailey, Jr. Boston: Houghton, Mifflin & Co. 1885.

This is of a class of books very acceptable to the readers of the GARDENERS' MONTHLY, a class which tells in a pleasant and popular way the interesting stories about plants that only those immersed in the full flood of science are usually supposed to know much about. The following is a specimen of the little book. After figuring and describing the Witch Hazel the author says:

"Superstitious notions were long associated with the witch-hazel. Its common name is a record of the foremost of these notions combined with the resemblance of the plant to the true hazel. The branches were once used as 'divining rods,' by means of which deep springs of pure water and veins of precious metals were supposed to be revealed. Even in recent years I have seen forked branches of the peach and linden dexterously balanced in the hand and their occult vibrations taken as infallible indications of streams of pure water beneath the surface. Fortunately for the magicians who perform with these mysterious branches, there are few places where any intelligent person would look for water that springs may not be found at a reasonable depth. Astrology was also debtor to the witch-hazel branches, if Token has written aright:

'Mysterious plant! whose golden tresses wave
With a sad beauty in the dying year,
Blooming amid November's frost severe,
Like a pale corpse-light o'er the recent grave.
If shepherds tell us true, thy wand hath power,
With gracious influence, to avert the harm
Of ominous planets.'

"The witch-hazel has been held long in repute on account of its medical virtues, and it is the source of popular remedy of the present day. The Indians are said to have made preparations of its bark for the treatment of tumors and inflammations. The wych-hazel of England is an elm, whose wood was used in olden times in the construction of wyches or chests. This antique spelling is often erroneously applied to our American shrub."

BARON MUELLER'S SELECT PLANTS.—The public seldom know how much they owe to the unselfish labors of men of science. We noted recently the republication of the above named useful work in this country, by G. S. Davis, of Detroit, it having already been published in India as well as in Australia, and a translation in German for the use of the people of the Empire. We now note by a paragraph in the Melbourne *Leader* of April 18, that this mass of useful labor, so highly appreciated everywhere, is a free gift to the world, Dr. Mueller receiving nothing from it, yet he takes as much interest in helping and working for Mr. Davis' success with the work in our country as if there were "millions in it" as the phrase goes.

SCRAPS AND QUERIES.

THE SHAMROCK OF IRELAND.—"W. H. P.," Iowa City, Iowa, says: "Will you be so kind as to answer through the columns of your esteemed journal, the GARDENERS' MONTHLY, the following questions:

"What is the true Shamrock of the Irish? What is its origin? To what species of plants does it belong? What does the name designate?

"According to my dictionary, it is white clover, but on inquiry of many different Irish people everyone disputed it. Hoping that you will kindly help me out."

[St. Patrick is said to have had an argument with an Irish king, endeavoring to win him to Christianity. The heathen was satisfied on all but one point. He could not understand how there could be three Gods wholly independent of each other, and yet only one God; that the three different persons were really but one individual person, though taking three different forms of development for special purposes or occasions. In order to explain more clearly what he meant the Saint is said to have taken some trifoliate leaf in illustration, which so satisfied the poor heathen that he gave up all opposition and was baptized. The good man's logic was of course at fault, for one leaflet of a clover is not equal to the whole leaf, but it served the purpose, and it is the event that is commemorated, and any one trifoliate leaf is as good as another. It was not long after the event is believed to have occurred that it was made public and celebrated; and the clover leaf was taken as the plant Saint Patrick employed. But as the knowledge of botany developed it became certain that the white clover was not a native of Ireland. It had only been introduced, as it had been into America, after commercial relations with the main continent of Europe commenced. That was subsequent to St. Patrick's time. Therefore the plant could not have been white clover. So the moderns have had to guess at another plant, and as the only trifoliate plant at all likely to attract observation at that early period was Oxalis Acetosella, abundant everywhere in Irish woods and places where St. Patrick was likely to meet with the original wild Irishman, it has been concluded that this must have been the only plant that could have been employed.

Just what the word Shamrock means, we should be very glad if some of our friends versed in the now almost obsolete Irish language could tell.—Ed. G. M.]

GIDDINGS' NURSERIES, DANVILLE, ILLINOIS.—It was not those miserable compositors this time, but the naughty Editor that located Giddings' nurseries at Danville, Indiana, instead of Danville, Illinois. But after all what business has Illinois with a Danville? Is the catalogue of names so fully exhausted that a wide awake city must seize that which has been appropriated by another? If we were about to found a city, we would rather call it Blunderbuss, Boomerang, Monkeyville, or any circus name in the wide world than Danville, Smithville, or any other pre-empted one. If not altogether in sackcloth and ashes for our mistake, we can at least drop a tear over the loss of 800 panes of glass to friend Giddings by the hail storm of June 5th.

THE LAWSON PEAR.—Mr. John S. Collins says: "I notice in last monthly, under the heading of 'The Comet Pear,' an opinion of the Editor of the GARDENERS' MONTHLY which I do not consider correct. It would no doubt have been proper for the owners of the farm on which the old pear tree had grown to have named it, if they had done so in a reasonable time and let the name been known to the public. The person now most interested in having the name of pear called 'Lawson,' states in his circulars and catalogues that the tree was probably grown before the time of 'John Lawson the Elder,' and that the Lawson family have always 'guardedly secluded' it from the public. They neither raised the tree or introduced it to the public, although they owned the tree for generations.

"I think there are several reasons stated in enclosed circular why the Comet is the proper name for the pear."

[We have no desire to be the umpire in any personal quarrel between two business firms. The fact for an Editor is that two firms have two names for one thing, and the public will ask the Editor which name is to be used.

The only facts for the Editor are simply these: The owner of a farm has a pear tree that came up on the land he owns. He gives a neighbor, as a compliment, a few grafts. After this the owner of the tree concludes to put the tree into commerce. He sells the whole stock in his possession to a nurseryman and tells that nurseryman its name is Lawson. Will it be contended that he shall be estopped from his undoubted right to call his own property what name he pleases, because a friend who received a few complimentary grafts chose to forestall him by giving one of his own?

We are told that Mr. Lawson never "uttered a protest against" the extraordinary liberty of a stranger naming his own property without consulting him in any way in the matter, and we do not know that he was called on to protest. If the owners "guardedly secluded" the tree from the public, they had the right to do so.

As an Editor, called on to decide this delicate question, we can only say that it appears that the owners of the tree have distributed the pear under the name of Lawson; they never consented to its being called anything but Lawson; and as, under pomological rules, "the owner of a tree has the right to name it," we cannot see that we have any discretion but to accept Lawson as its legitimate name.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

WORLD'S EXPOSITION.

BY J. E. WALDO.

The first season of the World's Exposition came to a close to-day. There were causes at the opening, and for a time subsequent, that prevented it from becoming a financial success. This is the only Exposition I ever saw, hence I do not propose myself as a suitable judge. But those who have seen others and assume to be capable of judging, pronounce this the grandest earth ever saw. Therefore, in every other respect, except financially, I conceive it improper to speak of it other than as one of the great efforts of the nineteenth century for the progress, advancement and improvement of man. It seems to me that any one contemplating seventy-five acres covered with buildings, and the buildings filled even to the galleries, can scarcely think of it as a small affair. It is now a thing of the past.

A second Exhibition is to be had commencing November 1st next. The State Commissioners, forty-five in number, from all the States and Territories, have taken hold with our people and a big success is promised. The State Commissioners propose to arouse the interest of their people in the success of this future Exposition, and that they will increase their exhibits so as to far surpass the former gigantic display.

This is the future outlook. What will our horticulturists and florists have to say about it? Mr. W. H. Boomcamp, in answer to Mr. Baker, tells him "he speaks in vain to Northern horticulturists; they do not want to risk their goods to a slow freight line," &c. And you say editorially that the difficulty is enhanced by the old-fashioned method of premiums. It seems to me the question is very little affected by these objections. There may be some difficulty in getting goods here in proper shape, but with proper effort can not the difficulties be surmounted? And should the question of premiums or no premiums be thought of much value? It seems to me the question is "Business."

In the Exposition that is past there were about six thousand exhibitors, besides their attendants, and an average on the grounds, each day, of not less than four thousand strangers from all parts of the earth—of course, mostly from the United States. Now, would not a business man like to have a fair display in this magnificent hall, properly attended to, and some one on hand to talk business, hand out catalogues, cards, &c.? Business men will see the advantage in a dollar and cent view of the thing. The new South is beginning to be in a situation to want such things and the big West was here in full force the past winter, and will be here in redoubled numbers the coming winter. I think there will be horticulturists the coming winter who will see this matter as business men—and as business men they will see this grand hall utilized to its utmost capacity. Should Mr. Boomcamp be with us the coming winter he will find the hall none too large—no room to spare.

The following plants, by their bloom, have attracted much attention in Horticultural Hall the past month or so:

In I. H. Erkener's Exhibit.

Cereus dasyacanthus,	Mamillaria aplanata,
" caespitosus,	" spherica,
" pectinatus,	" Rostricha,
" Dr. Regal,	" stellaris,
" ctenoides,	" sphacelata,
" speciosissimus,	" Heyderi,
" Fendleri,	Echinocactus Texensis,
" polyacanthus,	" Williamsi,
" straminens,	Large variety of Opuntias
Phyllocactus Ackermanni,	in bloom.

Orchids—Mexican Exhibit.

Odontoglossum Rossii,	Epidendrum vitellinum,
" Ehrenbergii,	" raniferum,
" cordatum,	" brassavolæ,
Cattleya citrina,	Maxillaria sanguinea,
" Leopoldii,	Bletia Fougeriana,
Harpophyllum spicatum,	Cyrtopodium spec. Honduras,
Oncidium variegatum,	Pachiva fastuosa,
" sanguineum,	Plumiera albo-lutea,
Lycaste Skinneri,	Russellia juncea,
" aromatica,	Carica papaya,
" Deppei,	Hibiscus rosa sinensis, fl. pl.
" aurantiaca,	" puniceus,
Schomburghia tibecina,	Pelargonium hybridum,
" spec. Guatemala,	Datura arborea,
Acropera luteola,	Musa rosacea.

126 Jackson St., New Orleans, June 1st.

[We have always had some difficulty in making ourselves understood in regard to this exhibition business. Our correspondent for instance notes that the question of premiums or no premiums should not be thought of. This is precisely our view. It should not be, nor is it thought of in these days by the best class of exhibitors. But the trouble is that those who get up expositions think differently. They act on the belief that all that is necessary to bring out a grand exhibition is to get out a splendid premium list, and, after advertising that ——— thousands of dollars will be awarded in premiums they think their work is done.

But exhibitors want more than this. They want appreciative and discriminative awards made by those in whose superior judgment the world at large has confidence.

If B. has something that he knows is superior to anything ever before seen in his line of business; knows that there will be judges capable of appreciating this point and who will say so; knows that the exposition will take trouble to publish this fact for him far and wide, he will exhibit, and the people will flock to see, and be willing to pay to see these best specimens of the world's skill. But if it is to be but a grand collection of ordinary merchandise, a bazaar, a mere mart where the people are simply to be brought together to buy and to sell, a mere question of ordinary "business" as our correspondent puts it, the average man will not send. He can make more money by spending the amount of cost in personal efforts in his own office, with the ordinary advertising machinery, than by going so far away.

Still another illustration of what we mean:—recently there was a spring meeting of the Pennsylvania Horticultural Society. One of our reporters gave in our magazine a detailed account of the superior merits of the articles exhibited. Letters have come to our office saying that that notice was of far more benefit to the exhibitors than all the "premiums," or all praises of the visitors who saw the things themselves. Now we contend that this discriminative work should not be left to a chance reporter. It should be the work, and at the cost, of the societies themselves. Let them honor their worthy exhibitors by an exposition of their excellences, while the exhibitors do their work by the exposition of their goods.—Ed. G. M.]

FLORAL NOTES FROM NEW ORLEANS.

BY M. H. LESTER.

If you think I am getting troublesome, bear with me this once. I do not think I shall write again for some time. The thermometer as I write is 90° in the shade at my door, and I often catch the shameless thing 4° or 5° worse than that. Mosquitoes have been here for some time—"every one as big as a shrimp"—and anyone that can write much under those circumstances must be gifted with more patience than has ever fallen to my lot.

Another celebrated amateur, D. T. Brown, Esq., of St. Louis, has been here. Mr. Brown is also one who is not in a hurry when he gets in among good plants. He likes to walk around them, and look at them. He says a good specimen palm is worth a wagon load of flowers. Mr. Brown secured probably the best specimen of a Cycas revoluta in the U. S., from Maitre & Cook, nurserymen here. [We should like to know how large was this specimen, as some Philadelphia conservatories may want to contest this.—Ed.]

Mr. John Rock, of San Jose, California, left here a few days ago well pleased with his visit. Mr. Rock was awarded several hundred dollars in money premiums alone, but it is just as likely as not he will never apply for the money. Mr. Rock donated his entire exhibit for the benefit of this city. If the city government decide to beautify the exposition grounds there are enough plants donated now to make it a perfect paradise in three or four years.

At Horticultural Hall the fruit exhibit has disappeared like magic; and with parties removing their exhibits, etc., the place is all topsy turvy. I notice among the orchids Schomburgkia tibicina and S. Lyonsii in bloom; also Stanhopea tigrina lutescens.

My Osmunda Japonica corymbifera and Kæmpfera Gilbertii, commenced to look bad last fall, so I threw them under the bench. I found them again in March, and shook them out and gave them a clean pot with peat and sand and good drainage. They are two of the prettiest plants I have now in 5-inch pots. Those plants have been figured or editorially noticed, I forget which, in the MONTHLY already, and may be otherwise familiar to some of your readers.

I have a famous piece of Osmunda regalis fenced in in a shallow corner of the pond, where the roots keep cool and moist all the time. The first Lotus this season, Nelumbium speciosum, opened June 2d; there will be flowers now every day until frost.

With regard to the portion of Mr. Boomkamp's letter in the MONTHLY for June, that refers to my notes from here, allow me to say that no exhibit was or could be in better condition than that of the "General Bulb Co." at the time Mr. Boomkamp left here.

The exhibit of Cactus, etc., from San Antonio, Texas, was entered on the books of Horticultural Department of World's Exposition by J. Wishner & Co, and business cards to that effect distributed at the Exposition, the proof of which I send you. Under those circumstances I don't see what Mr. Erkener has to complain of. He had charge of the exhibit while here.

Prof. Tracy was warmly welcomed by his many friends on his return to look after the exhibit from his State.

In my notes from here in the MONTHLY for June, page 190, mention is made of Dendrobium Dalhouseanum. As it is there I must have written it so, but the specimen is Dendrobium densiflorum. *June 5th, 1885.*

EDITORIAL NOTES.

THE PREMIUM SYSTEM, AS EXEMPLIFIED AT NEW ORLEANS.—As a good illustration of the absurdity of the premium system noted in our last, a correspondent says: "A lady knowing I was fond of cactuses bought for me from one 'who has taken ten premiums,' the rare Astrophytum myriostigma, which she knew I wanted. But it turned out to be the common Aloe longiaristata. Heavens! who competed? or rather, who were the judges? Of what value to the community are ignorant awards like this?" Exactly; but if they were "the best on exhibition," the judges awarded properly. Now, suppose the committee were compelled to give the reasons for their award, which, in this progressive age, we contend they should do, and could say "we make this award for ——, and for —— that reason," and among others could say "in a tribe of plants like cactus in which there is much confusion of names, we found them all accurately determined, therefore we make the award of —— dollars;" then we have a system that would invite exhibitors. A firm that could get the reputation which such an award as this would give, that they had a collection of cactuses true to name, would have a prize worth contending for.

THE "AMERICAN GARDEN" PRIZES.—The *American Garden* very liberally offered $100 in premiums for new fruits, flowers and vegetables, at the exhibition at Clinton Hall, New York, June 18th and 19th. We received a note with a request "to give it publicity," on the 13th of June only. We note this here, because it is a matter of frequent complaint that we fail to notice what "we might just as well do," and which we would cheerfully do, if sent in time.

PENNSYLVANIA HORTICULTURAL SOCIETY.—The exhibition of Chrysanthemums so successfully inaugurated last year, is to be repeated this, and is to be held on November 10, 11, 12, 13. A schedule of premiums has been issued which may be had by application to the Secretary, A. W. Harrison, Horticultural Hall, Broad St., Philad'a.

AMERICAN SOCIETY OF FLORISTS.—The first annual meeting of the American Society of Nurserymen and Florists, will be held in Cincinnati, on the 12th to 14th of August. We did not receive notice in time for a more detailed notice of what appears to be a very interesting programme.

AMERICAN EXHIBITION IN LONDON.—Mr. Burnet Landreth, the well-known chief of the Agriculture Bureau of the Centennial, writes: "As one of the Vice Presidents of the 'American Exhibition' to open in London May 1st, '86, permit me to call your attention to the proposed horticultural display. As far as it is practicable it is intended to have in the section referred to a comprehensive show of American plants, fruits and seeds, forest products and horticultural appliances. To this end the leading 'English Nurserymen' have promised to contribute to the full extent of their ability, but there are a vast number of American plants uncultivated in Europe, some of which are beautiful as decorative objects and others useful in the arts. These and those of every other class will attract much attention both artistically and scientifically, and the display from American nurserymen would result in an increase of orders for horticultural objects, not only from England, but from all of Europe and the rest of the world, as anything shown in London is presented to all mankind. The American Exhibition will continue from May to October, and will be held on a space of twenty-three acres near South Kensington. The intention of the organizers of the Exhibition is to show everything that the people of the United States have to sell, with the design of increasing trade.

"At the same period the British Colonies will hold at South Kensington a six months exhibition to be termed the 'Colonial Exhibition,' and it would seem a wise policy for the nurserymen and foresters of the United States to be on the ground ready to meet the test of competition.

"Circulars can be obtained by addressing

"GENERAL NORTON, Sec'y Amer. Ex.,

"No. 7 Poultny, London, England."

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

The excessive drouth which has prevailed in many parts of the country, has not been without its lessons to the horticulturist. In Germantown where from three to five inches of rain is the record for June, the fall this season has been but .99 of one inch, and up to the time of writing this, early in July, there has not been a drop to add to it. Though there have been local rains in many places, the showers have generally missed, and hundreds of spring planted things have passed away. Shall this be an argument for fall planting? Yes, and no. Yes, if we are willing to believe that fall is at least as good as spring; no, if we ever expect to get complete immunity from all loss in planting trees. It must be remembered that trees die after transplanting, from lack of moisture. They dry out. Trees die in winter and in summer that have not been transplanted, just the same as if they had been, if the moisture does not get into the branches as fast as it dries out. A transplanted tree has a worse chance in this respect than one not transplanted. First, because it has lost some of its roots; secondly, because the earth does not set as tightly against the roots as before; for, no matter how well a tree may be transplanted some of the roots will not be in close contact with the earth, and then it may as well not have that much root, for the root must be in close contact with the earth before it can get any moisture from it. It is for this reason that very often a tree with "splendid" roots, and "well planted" will die before one that has poor roots; the very thick mass preventing the earth from getting close in around each one. A fall planted tree has this great advantage, that the heavy fall rains have a tendency to carry the earth in and around the roots, while the low temperature following is unfavorable to any excessive evaporation from the branches. The only enemy to be feared is excessively cold and drying winds.

In spring planting we not only have the difficulty of packing the earth well in among the roots, but have the possibility of heat and drouth immediately following. Aside from these theoretical reasonings, the experience of the last few seasons has been very favorable to the success of fall planting. As early as it can be done in the fall the better. Another lesson relates to watering in a dry time; water will not supply the place of shortened roots, or of soil ill packed in, but it is some good to the roots that can reach the earth. But the chief trouble is that people seldom commence to water till the tree is in a dying condition, and when it is too late to be of any service. The intelligent gardener waters before the plant needs it badly, and this is one of the gardener's arts that a stupid fellow can never learn, and which after all can only be well taught by experience. And

in watering it is rather an injury than a benefit to pour the water on the surface. This compacts the earth, and it dries out sooner than if not watered. But if a basin be made about the tree, water poured in, and as soon as the water soaks away the soil filled in again lightly—not pressed in—such watering is a great benefit. Again, pruning is a great help to a tree suffering from drouth after transplanting. If, with all the care in watering or otherwise, some branches do not push into growth freely, cut them back at once.

As soon in the fall as bulbs can be obtained they should be planted—though this will not generally be the case till October,—but it is as well to bear in mind that the earlier they are planted, the finer they will flower. This is particularly the case with the many varieties of Lily, and of the now popular Narcissus; and it may also be remembered that though Dutch bulbs, and other hardy bulbs will grow well in any good garden soil, low alluvial or rather moist ground, gives the best results.

The latter end of August is one of the best seasons of the year to transplant evergreens. The young growth of the past season has got pretty well hardened, so as to permit of but very little evaporation,—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cold autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being usually very warm, the trees have to be set again in the ground almost as fast as they are taken up; so that it is not safe to bring them from a distance. It is as well therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue,—which in September and October is very likely,—one good watering should be given, sufficient to soak well through the soil and well about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil should be drawn in lightly over the watered soil, which will then aid in preventing the water from drying out soon again.

Herbaceous plants may be divided early in the fall, and with great profit set out, if a little care be taken to keep them from being drawn out by frost. Some few will thrive all summer in poor and hard soil; but the majority will only live well in a rich open soil made especially for them. Some die out from being left to mature seeds. Unless we want a few seeds, flowers should be cut as fast as they fade, just as we do with roses. Some hardy perennials are, however, much the best when renewed occasionally from seeds.

COMMUNICATIONS.

THE AMARYLLIS IN THE SOUTH.

BY P. H. O.

The Amaryllis is a plant which deserves a greater amount of attention in the Southern States than is usually accorded it. The hybrid, A. Johnsonii, is an old inhabitant of the gardens in the South. Other varieties are not often met with. The reason for this is perhaps, besides, that many are as yet high-priced plants; that it is not generally known that all of them are hardy, if planted in places not too wet. There may, however, be a few varieties which it will be difficult to bloom in the garden. Chiefly among these I will mention the belladonna varieties and a few others. The above-named kind takes its season of growth from November to May, and is in consequence, often cut back in winter by sharp frosts, which prevents the plants from getting strong enough to flower. I believe, however, that it will do well wherever the Orange is cultivated. The other varieties and species succeed splendidly with me. The bulbs ought to be planted in pots to start them in, which, if it is done early in September, will sometimes bring them to bloom in six weeks. During winter they must be kept from freezing, and in spring, after blooming, they may be set out in the border, and provided they have a covering of 4 or 5 inches of soil over the bulb, will never be killed, either by frost, drought or hail. Their flowering season is in April here in Texas, but in the summer of 1884 I have had some in bloom in every month from April to September. I have cultivated many kinds of plants, but with no kind have I experienced so little disappointment as with the Amaryllis; in fact I have not lost a single plant. It is subjected to no disease, no insects attack it, and the possessor of a bulb, or a few, may expect in course of time a moderate increase by side bulbs.

For the information of those who are unacquainted with the merits of the different varieties and species I will name a few that have done well with me in the garden. There is, first, that old variety, A. Johnsonii, found in many gardens in the South. Amaryllis pardina is just as free blooming as the preceding; in fact, my plant produced three flower spikes the last season. Amaryllis etoile, white with red stripes, Amaryllis psittacina, Amaryllis fidelia, Amaryllis astrosanguinea, the best dark red Amaryllis, Prince of Orange, and a host of others, most of which will do admirably in the garden; and the cultivation of this plant ought to be more extensive, as there are but few Lilies that will do in the South and the Amaryllis takes naturally the place of the former in the garden. *Austin, Texas.*

[We welcome these efforts to encourage Southern gardening. In the Editor's travels through the South at various times, the glorious capabilities for gardening that laid unimproved were remarkable. This suggestion of the great value of the Amaryllis as a popular Southern flower should be improved on.—Ed. G. M.]

CAUSE OF BROKEN BRANCHLETS IN THE NORWAY SPRUCE.

BY PROF. W. A. BUCKHOUT.

I blame the squirrels for the broken branches found under the Norway Spruces in the spring—note of which you made in last number of GARDENERS' MONTHLY.

Although I have never seen a squirrel cut a branch, and know no reason why they should do so, unless it be for sport, the facts are these:

1. In and about our oldest Norways, which are close together, and intermixed with other trees, squirrels are often seen feeding upon the seeds, and the cones are entirely cut up by them, the fragments strewing the ground beneath; and here the broken branches are found in abundance.

2. Isolated trees on the campus retain their cones and their branches. I have never seen squirrels here.

3. I notice the same relation between broken branches, cut up cones and feeding squirrels, among our native Pines (P. rigida) all about us.

4. The branches seem to me to be cut off by squirrels' teeth. I send a few specimens by this mail. *State College, Centre Co., Pa.*

[These are undoubtedly cut by squirrels, because the cut made is the cut which squirrels make in gnawing a branch. Those which we received from New Hampshire were broken off at a bud—disarticulated as it were—which a squirrel could not do. We are now inclined to think that after the rodent has cut the branch, and drying commences, disarticulation of the side branchlets results, and in this way their presence among the evidently gnawed-off branches will be accounted for.—Ed. G. M.]

BEAUTY AND UTILITY IN THE SPIKE RUSH.

BY G.

Among the sedges of our wet lands there are few plants more beautiful than some of the more delicate species of Eleocharis, called "Spike Rushes" by authors, and "Frog's Hair" by country people. A large patch of low ground covered by these sedges is often a very charming spot for the eye to rest upon, though it often proves a treacherous place for the foot. Strange so say, these plants bear transplantation well, and with moderate watering will grow even in dry ground.

I think the broad-leaved Panic Grass, Panicum latifolium, when growing vigorously is one of our handsomest and most striking wild grasses. Grown for its rich and dark green leaves, it would be a very interesting plant in winter. I am informed by an intelligent farmer that cattle eat the hay of this grass greedily, though it is very coarse. Would it not pay to utilize it as a forage plant? *Merchantville, N. J., June 8th, 1885.*

[We have occasionally noted the avidity with which cattle eat the Eleocharis, and regard the hint thrown out by G. as a valuable one.—Ed. G. M.]

AN OPEN LETTER TO A "FLOWER SISTER."

BY MRS. FANNIE E. BRIGGS.

Mrs. Wellcome's letter in the June number has touched so many chords of memory that I must respond; and as, doubtless, many of the readers of the GARDENERS' MONTHLY have the same associations, I trust our kind Editor may give me space in its pages.

Those "Hundred-leaved Roses," how well I remember them in the garden of my childhood's home, among the hills of Vermont. I have never seen any like them since. Some of the Hybrid Perpetuals remind me of them, but they are not the same. They grew in great thickets in that garden, receiving no care save an occasional cutting of the old wood, yet coming forth every year in prodigal profusion, and all so perfect. My recollection of their color is, that they were deep, clear rose, like the deepest shade in "York and Lancaster."

We had a neighbor who had Damask Roses, and her little daughter used to bring them to school to exchange for mine, yet, though we both loved them with our whole childish souls, we never exchanged plants. I don't know why, unless it was the changeless condition of everything

in that old New England town, the old houses, and orchards, and gardens, the same year after year, and we were not yet prepared for innovations.

And the wild flowers! To use Mrs. W's words: "Ere the snow was fully melted I went in quest of them." For on those dear old hills Winter comes early and lingers long. And O, how I used to long for the coming of spring with her bright train!

The Hepaticas came first, then the blue Violets and the spring beauties, the Trilliums and the Adder Tongues (Erythronium), and many more, close at home. In a neighbor's woods there were Blood-root and Columbine; in another grew the beautiful little Chickweed Wintergreen (Trientalis), and still farther away, towards the river, under the Pines, the lovely Trailing Arbutus. And the Wood Violets! I see them yet, fair and stately, and pure, though more than thirty years have passed since my eyes beheld them. A relative (another exile), to whom I wrote of them, says, "When I think of those Wood Violets as they grew in our Maple grove, they seem like beautiful, intelligent spirits standing there." What would I not give to have them here! Not even those Roses could be more dear.

And this brings me to a theme near my heart—the culture of wild flowers. In the first flower-bed I made in that old home garden I gathered my wild-wood favorites. The Violet and Hepatica, the Blood-root and Columbine grew side by side with the few common garden flowers, which were all I knew of then. Since then, in all my wanderings, I have carried out my childhood's plan. In my Iowa home were gathered treasures from many States; mementoes from many floral friends. In my brief sojourn in California I gathered bulbs of her beautiful flowers, and they smile on me now as I write. Bulbs gathered in winter from the plowed fields of Oregon grow beside them, and in another bed are lineal descendants of the Iowa flowers I sent long years ago to a friend in Michigan. What could be better keepsakes or memorials? Have not they, who keep through all their years the love of flowers, found one fountain of perpetual youth?

One item more. A newly arrived immigrant came here on some business a day or two since. A plain man of fifty, a native of bleak Finland, but now just from Liverpool, which had been his home for fourteen years, rather oppressed by the strangeness of everything, and full of care about getting settled in his new home. While waiting, he walked down into my little flower-garden, and came back with a shining face. "It vas so pretty," he said; "I vas in de pig gardens in Liverpool; dey vas pigger, but dey vas no prettier, I tink I like my missus to see it. She tink she like flower-garden some time." Of course I invited him cordially to bring her, and when she is ready for that garden she shall have bountiful contributions. There is a free-masonry among flower-lovers, and that word, "flower-lover," is the magic password.

La Centre, Washington Territory.

EDITORIAL NOTES.

THE WHITE FRINGE TREE.—It takes a long time for plants to be thoroughly well known, and this we now illustrate is a striking example. It has been in cultivation for a century, but chiefly in the gardens of the curious, and it is only of late years since it has been "handled," as the trade term goes, by the much abused tree agent, that the great merits it possesses as a highly ornamental shrub of strong growth are appreciated. It flowers early in June, and a tree covered with its

large clusters of pendent white flowers, cut as if by a scissors to a mass of fringe, is a sight once seen never forgotten, for there is none other that has such a marked peculiarity as this.

In August and September some of the trees are followed by fruit of an oblong shape, bluish purple, resembling grapes, and are truly ornamental. The tree belongs to the same natural family as the Ash, Oleaceæ, and it is the peculiarity of this family, as in the Ash, for instance, to have some trees with wholly barren flowers. In this case, of course, berries do not follow. Its botanical name is Chionanthus Virginicus, and it is found wild as far north as Southern Pennsylvania, usually in damp shady places, but under culture it is not at all fastidious about soil or situation; and it is one of those easy going plants that few winters kill or hot summers injure, and, besides, transplants without making much objection.

FLORICULTURE IN GEORGIA. — The Augusta *Chronicle* tells us that the mild climate of Georgia is very favorable to gardening. A single red variety of the Camellia brought from England in 1808 or 1809 is now a fine tree in Charleston. It is 30 feet high and is of wonderful beauty when in blossom. The Olea fragrans and Magnolia fuscata are popular evergreen shrubs. The public Park at Augusta was begun in 1881, and is very beautiful. The varieties of cypress and arbor vitæs are the best of the terebinthine evergreens, and nothing is more prized than Magnolia grandiflora. Tea Roses are perfectly at home after blooming in what may be called the winter season. Georgia has fifty commercial florists, and the taste for flowers and flower gardening is growing rapidly.

A DAHLIA STEM BORER.—A correspondent of *Vicks' Monthly* says that he has found a stem borer very destructive to the Dahlia. We have not heard of this enemy before. It may account for the sudden withering of Dahlia plants of which we have heard some complaints.

EARLY AND LATE FLOWERING SINGLE ROSES.—If one wants to get all the good out of Roses that they are capable of affording, and has room, there is nothing will fill the measure equal to a collection of single Roses. The Red Kamtschatka or Rosa rugosa, is the earliest we have seen. This comes in May. All through June some one or another is in blossom, and in July the single Prairie Rose concludes the list. And in autumn there is the red fruit of various forms, to give a whole season with the flowers of changeful beauty.

THE CATALPA.—So much has been said of the Catalpa as a timber tree, that we may forget that it is also one of the most desirable of ornamental trees. In July it is a mass of lovely flowers at a time when almost all other showy flowering trees are gone. It is late in coming into leaf, and its seed vessels are not particularly desirable, but the attractiveness of its flowers atones for all other defects.

LARGE PINUS EXCELSA.—The *Garden* describes a Himalayan Pine that is 7 feet 9 inches, 3 feet from the ground. We are not sure but we can beat this in America. There are some very fine trees of this grand Pine in the vicinity of Philadelphia. If not mistaken we believe there are very large ones at Bloomsdale and at Rosedale. There are some in Germantown 60 to 70 feet high.

COMBINATION PLANTS.—Not nearly as much advantage is taken of combinations among plants as they are capable of affording. Last June we noted a plant of the Bladder Senna, Colutea arborescens, and the Amorpha frutescens, which had managed to grow together forming one stock, that, both coming into bloom at the same time, one with bronzy purple, the other with orange yellow flowers, had a very pretty effect indeed.

A MAGNIFICENT SPECIMEN OF THE CEPHALONIAN FIR.—The grounds of the late Robert Buist have been cut through in several directions by the growing demands for city streets, and a magnificent specimen nearly 6 feet in circumference, is now standing on the side-walk. It is only about 35 years old. It may be, perhaps, 28 or 30 ft. high, however—from the opportunity it has to spread its heavy side branches. These have spread many feet. Many connoisseurs would give a thousand dollars to have such a lovely specimen safe on their grounds.

NEW OR RARE PLANTS.

ANDROMEDA JAPONICA.—This new addition to hardy plants from Japan promises to be a good one. It is a very early flowerer, the racemes of blossoms being about 8 inches long. It will be a good companion plant to the sorrel tree of the South, which has always been a rare favorite in American gardening.

RED PLATYCODON GRANDIFLORA.—Of this capital hardy herbaceous plant we have white and blue in our gardens. A rosy violet variety has been introduced from Japan by Mr. Maries, and which bears his name.

PRUNUS PISSARDI.—This proves to be only a colored leaved variety of the Myrobalan plum. It is a very beautiful variety, and if it will keep clear of the blights and bugs which trouble almost every flowering plum in gardens, it will prove a great favorite.

SCRAPS AND QUERIES.

SALT ON LAWNS.—A correspondent from St. Paul, Minnesota, writes: "As a reader of the GARDENERS' MONTHLY for many years I have become a firm believer in its teachings, but was sadly disappointed by following the advice given on page 167 of the June number regarding the treatment of lawns. My lawn, created at great expense and about eight years old, not doing as well as formerly, I had about concluded needed some fertilizer, and was on the point of sending to Henderson for his lawn enricher when your article appeared. I applied the salt some two weeks ago and it killed the entire grass in three days, and to this date there is no sign of its reappearance. Will it spring up again? If not, I will plow up and reseed."

[It was not an editorial suggestion, but one from a correspondent who simply said that "a small application of salt is an excellent practice, though old." He was not giving directions, but referring to an old and well known practice, and referring to the action of the salt air on the excellent growth of lawn grass at Newport, in Rhode Island. The trouble in our correspondent's case comes from his misunderstanding of the term "small application." He gave a large application. Salt for lawns should be very fine salt, and should be sown so thinly that one could scarcely see that any had been used, except perhaps a very slight grey tint to the green of the grass, and it should be applied early so that the spring rains might leach it a little before the growth commences.

What to do in the present unfortunate condition of affairs is not clear from this distant view. The next rain will leach some of the salt away, when there will not be too much for vegetation, unless an extraordinary amount of salt has been used. Some of the roots will probably then grow, and we should in October rake the whole over and sow fresh seed. It will no doubt be a first-class lawn again next season.—Ed. G. M.]

THE YORK AND LANCASTER ROSE.—A correspondent desires to thank Mrs. A. G., West Virginia, for a plant of the old striped rose, the York and Lancaster as it is called, which was kindly sent to her. It may be as well to say that the rose has evidently derived its name from the fact of the two great houses of York and Lancaster, adopting respectively the white rose and the red rose as their respective cognescence. Eventually the wars between them ceased by an union of their families. The union of the white and the red in this striped flower would naturally suggest the history of the great families—the union of York and Lancaster. In Washington Territory, as we are informed by a lady, it is called the Calico Rose.

BLACK FLY ON CHRYSANTHEMUMS.—A correspondent complains that Paris Green placed on Chrysanthemums had no effect at all in ridding the plants of the black aphis. Why the complaint is sent to us is not clear, as we have no knowledge that the GARDENERS' MONTHLY ever recommended it. Paris Green or London Purple will kill any insect that can eat it, such as beetles and caterpillars that feed on the leaves of plants, but Aphides do not eat, but suck the juices from the interior, and of course escape the poison. To destroy these we have to give them some treatment, more hypodermic than gastronomical. Oily substances or poisons taken in through their breathing apparatus would be more to the point with them. Fir tree oil or tobacco water will be more effective.

GAS KILLING THE ROOTS OF TREES.—Nanz & Neuner, Louisville, Ky., write: "Through the carelessness of the New Gas Co. (water gas) we are losing a number of trees here on the principal streets, some as old as twenty and thirty years. Great many are completely dead, especially the Ailanthus, while Silver Maples and Lindens don't seem to suffer so much from the leakages in the pipes. But the leaves are turning yellow, and perhaps before long they will be dead also. Pipes are relaid now, and there is perhaps no further danger of seeing more trees killed. Can any remedy be employed to save the sick trees? Will watering help, etc., to get the poisonous gas out of the soil? If anything can be done please reply and oblige us. We will publish it in the daily papers so it will benefit all alike."

[We have told these gentlemen all we know; but as it is not as satisfactory as we should like, insert the letter as a query here, in case others may have had a more successful experience than we.—Ed. G. M.]

MAGNOLIA CORDATA.—In reference to our note at p. 196, Professors Sargent and Gray write that there is a specimen of the true species in the Botanic Garden at Cambridge, Mass. Dr. Gray remarks that it is very distinct from the Magnolia acuminata growing near it.

Parsons' Sons & Co. send us a genuine specimen from a plant they have.

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

CULTURE OF CACTUSES.

BY A. L. SILER.

For several weeks past I have been on the tip-toe of expectation over an article on the growth, culture and habits of the Cactus, that my Cactus correspondents have been telling me would appear in "this month's GARDENERS' MONTHLY."

I have just read that article, which is very good and excellent as far as it goes. The writer says the best way to treat them (the Cactuses), is to put them away where the temperature does not fall below 45°. I do not know how cold it is in Canada at 45°, but here in Utah, Echinocereus phœniceus, Echinocactus Simpsonii, Mamillaria vivipara, var. Neo Mexicana, and Opunta Missouriensis, stand out in their native places and do well with frost 22° below zero; but they grow upon well-drained, gravelly hillsides, and are usually covered with snow from Christmas to the following May. So much for the iron-clad Cactus. Then there are Cereus Engelmanni, Echinocactus Whippleii, Echinocactus Sileri, Echinocactus cylindraceus, Opuntia rutila, Mamillaria chlorantha, that grow with the Agave Utahense on the sand-stone ledges, in many instances with hardly sand enough to cover their roots, and there are two Cactuses that stand out exposed to the fierce heat of the summer sun where hardly a lizard is to be found, with the thermometer down to zero in the winter.

In the Beaver Dam Mountains, west of St. George, growing in the sand on the limestone ledges with Yucca brevifolia are Echinocactus Johnsoni and E. LeContii. In this locality there is but little snow, but the thermometer often falls within ten degrees of zero.

The question has been asked of me very often lately as to when it rains and when it does not. Snows and rain commence about the 15th of December and continue until about the first of May, when a period of drought sets in, lasting until about the 24th of July. This being a holiday, it always rains, and it continues to rain until the last of August. At the higher altitudes where the first-named Cactus grow, frost usually follows a rain, let it be at what season of the year it may. Last night, June 11th, ice formed ¼ inch thick, following a very unusual rain storm that came off last week.

A few years since I had a number of Agave Utahense that I wanted to keep until I could get orders for them. I planted them with a Mamillaria vivipara in a box of clay soil, and told the lady in charge of the place to water them occasionally. I was away for some two or three months. When I returned to get my Agave plants to send away, I found them swimming in water and was informed that they had been sitting on a back porch where they got the morning sun only with a pail of water from the well every morning. I expected that they were ruined, but to my surprise they were well supplied with new roots. I have, when collecting Cactus, set out on dry ground in favorable locations what I had left over after filling orders; but I have never had the good fortune to have any of them root as well as the M. vivipara set with the Agave noted.

A number of the readers of the GARDENERS' MONTHLY have asked me to tell them about the soil that our Cactus grow in. Cereus Engelmanni arrives to its greatest perfection on the ragged edges of limestone ledges with a soil of clay and gravel. Echinocactus Johnsonii, E. LeContii, M. chlorantha and Opuntia rutila delight in a southwesterly exposure on the side of sandy and gravelly ridges with bed rock of limestone. Echinocactus cylindraceus, E. xeranthoides, E. Whipplei, Opuntia chlorotica, M. phellosperma are found on the west side of canons facing the morning sun, but never on the east side. sand on sand stone ledges generally. Echinocactus Sileri on low hills, soil rotten gypsum. Echinocactus phœniceus, E. Simpsonii, Opuntia Missouriensis, gravelly soil facing to southwest, or on top of high gravelly hills about the rim of the great basin. Mamillaria vivipara Neo Mexicana, gain their greatest perfection in very tight clay soils amongst sage brush.

Ranch P. O., Kane Co., Utah, June 12th, 1885.

[This account of the kind of soil and the habits of some of our native Cactuses, will be very interesting to the lovers of these curious plants—a

continually increasing circle. What Mr. Siler says about water for Cactuses we can confirm by experience. Even pot Cactuses we plant in the open ground during summer, and, whenever we have very hot weather for a few successive days, pour on the water, and it is wonderful how they seem to enjoy it.

In this section we find Mamillaria Nuttalliana, M. vivipara, Echinocactus Simpsoni and Opuntia Missouriensis entirely hardy, though singularly enough it never flowers. This peculiarity follows others. In Southern Utah the writer dug up (with the swingle-tree of a wagon, while his wife held the horses' heads) three large masses weighing 20 pounds each, of Echinocactus phœniceus, then covered with their magnificent wine-glass-shaped flowers. On returning from the Pacific they were found safely at home. Though they are in charming health, they have not had a flower the past two summers—though the dry mesa soil on which they were growing, has been imitated as nearly as possible. Under culture we cannot always rely for success on imitating natural conditions. We must learn from experience.—Ed. G. M.]

THE RELATIVE COST OF STEAM AND HOT WATER HEATING.

BY W. H. PAGE.

In your remarks at the close of an article with the above heading, July number, I notice you say "As a question of physics, it takes more coal to heat a certain amount of water to a condition of steam and keep it to a condition of steam than it does to warm water."

Now, Mr. Editor, I think your statement a little misleading. You say, a certain amount of water. Well, I will call this certain amount of water 50 gallons for steam and 50 for hot water. That is, a certain amount for each apparatus if I have your meaning of it. Now of course it will take less to heat this water to the usual temperature in a greenhouse circulation which will average about 190° than what it would to make steam. But is that a comparison? I should say not. Now let me put this in a light that will be more easily understood. In a good steam boiler I have 50 gallons of water, sufficient to raise steam to fill the whole system of circulation. In order to heat by hot water all the circulation must be full and the proportion for hot water would be 500 gallons. Now we start a fire in the hot water boiler and let it run full force, and in two hours we have the water to a boiling point in the boiler and about half-way through the circulation. In the steam boiler the water can be brought to a boil in twenty minutes, and in ten more the whole system of pipes can be brought to 212°, and at a pressure of two pounds the draft will be shut off and the fire only consumed fast enough to maintain the pressure. With the steam there is no heat for the first twenty minutes, and but little from the hot water, but at the end of two hours the steam boiler is turning out the greatest quantity of heat and working with drafts closed, while the hot water boiler is burning its coal without hindrance. The steam boiler has been under check for one and a half hours.

My experience has been that it takes one-third more coal to heat a dwelling house by hot water than by steam; and if true in this why not in greenhouse heating? With proper adjustments steam is the most economical method of heating a greenhouse, and can be left alone for a longer time than any hot water boiler. *Norwich, Conn.*

[There is not probably much difference between our correspondent and us. The difference is chiefly in the expression of the same idea.

Our chief desire was to impress on the reader a fact obvious enough in itself, yet apt to be forgotten in discussions, that heat can only come from fuel, that the shape of boilers, or form of the water (as steam or the ordinary liquid) adds nothing to the quantity of heat in a given amount of fuel. We must increase fuel to increase heat. It certainly does take less coal to merely "warm" 50 gallons of water than to make steam of it; and yet the point made by our correspondent, that a dwelling house can be heated for one-third less cost by steam than by hot water, be perfectly correct. But this comes from the more ready distribution of the heat, as we understand it, and not from "economy in fuel," as so generally contended for.

Practically, as we have said, it is but the expression of the same idea, but we have often seen that a correct statement of a principle is by far the best path to the understanding of that which depends on it.—Ed. G. M.]

MANETTIA CORDIFOLIA.

BY CHARLES E. PARNELL.

The cordate leaved Manettia, M. cordifolia is a very beautiful, half hardy, summer flowering, twining or climbing vine, belonging to the natural order Cinchonaceæ.

It is a native of Buenos Ayres, where it was discovered by Mr. Tweedie, who sent seed of it to a friend in Scotland, and where it first flowered in 1832.

It is a twining or climbing plant growing from ten to fifteen feet in height and having opposite shining green leaves about two inches in length, and the flowers are produced in the greatest profusion during the late summer and early autumn months. The flowers, which are of a bright scarlet color and about two inches in length, are produced from the axils of the leaves in such profusion as to almost cover the entire plant. And when we consider the ease with which the plant can be grown, we cannot but regret that it is so rarely seen in cultivation at the present time.

This Manettia is a plant easily cultivated, doing best when grown in a deep, well enriched soil, and it should be well mulched and copiously watered during our hot, dry, summer weather. It can be planted outside about the 10th of May, and should be taken up and potted as soon as its foliage is destroyed by frost and wintered in any dry, frost-proof cellar, or under the greenhouse stage, if care be taken to prevent it from becoming too wet.

About the 1st of April the plant should be removed to a light, sunny situation and started into growth, when it can be planted out and treated as above advised.

The most essential point in the cultivation of this beautiful summer climber is, the proper training of the young shoots, and for this purpose the plants must be well looked after, and the shoots so trained as to occupy the desired space while they are yet young.

This Manettia is usually described as being a greenhouse climber, but I have found that when so grown it is so subject to the mealy bug and other insect pests that the patience of the cultivator becomes so exhausted by repeated and vain efforts to exterminate them that he finally abandons all attempts to cultivate the plant. When grown in the open air it proves to be perfectly free from all insect pests, and well rewards its cultivator with a profusion of bloom.

Propagation is effected by cuttings of the half-ripened wood, and after the plant has attained age by a careful division of the plant, or if cuttings of the roots four or five inches in length are placed in sand in gentle bottom heat they will soon produce nice plants, and if the young plants are well cared for nice flowering specimens will soon be obtained. The generic name was given in honor of Xavier Manetti, prefect of the Botanic Gardens at Florence, about the year 1756. The specific name alludes to the shape of the leaves.

This is a plant that can be grown in any situation where a herbaceous or summer climber is required, for during the dark days of winter there is no obstruction to the light, while for verandahs or trellisses no plant is equally as valuable. When well grown it will cover a space of from ten to fifteen feet in height by as much in breadth. *Queens, N. Y., July 2d, 1885.*

[We are glad that Mr. Parnell has called attention to this very beautiful plant, which in the anxiety to get novelties has been suffered to drop out of notice. When grown as Mr. Parnell suggests, it is one of the handsomest of summer open-air plants. Philadelphia gardeners in the olden times, used to grow it as a tub plant for lawn decoration, and often had specimens five feet high and six feet in circumference, a mass of scarlet from bottom to top in September. It is sometimes called Manettia glabra.—Ed. G. M.]

NEW OR RARE PLANTS.

DAVALLIA TENUIFOLIA VEITCHIANA (see illustration on following page).— Ferns adapted to pot culture are now rather numerous, and one may readily make a good selection and get great variety among a comparatively small list; but kinds adapted to hanging vases or baskets are not by any means abundant, and new additions to the list are very welcome. The one we now illustrate is a particularly pretty kind for this purpose, and was introduced by Messrs. Veitch, of Chelsea, near London, who furnish us with the annexed description:

"Probably the most graceful and finely cut Fern yet known; it was sent to us from the Straits Settlements by the late Dr. J. T. Veitch, whose name it bears. The fronds are 2½ to 3½ feet long, elegantly arching on all sides, the leafy portion broadly lanceolate in outline, and very finely cut. As distinguished from Davallia tenuifolia, the fronds are arching, almost drooping, the foliage is much more lace-like, the stipes have a warmer reddish tinge; the pinnæ are longer, more slender, and have their ultimate segments more minute. The light and elegant drooping habit of the plant renders it one of the best basket Ferns for the stove ever introduced.

"It has received the award of a First Class Certificate from the Royal Horticultural Society, and

a Certificate of Merit from the Royal Botanic Society,—and *The Garden* says it is one of the most valuable additions to Ferns that has been made for a long time."

flora which had seven flowers on it but no fragrance that could be noticed at all. In 1883 the same plant had twenty-two blooms but still no fragrance. I had a lot of night-blooming Jasmine in

Davallia tenuifolia Veitchiana. (See description, page 233.)

SCRAPS AND QUERIES.

NIGHT-BLOOMING CEREUS.—"W. L. M.," Des Moines, Ia., writes: "Please tell me if you can if there is more than one kind of Farfugium, and to what class or family of plants it belongs? Peter H. makes no mention of it in his H. B. of Plants that I can find.

"In 1882 I had a night-blooming Cereus grandibloom the first time the Cereus was in bloom and most of the visitors thought it was the Cereus that was so fragrant. But I was not so lucky the second time. I should like to hear an explanation from some one, unless I am mistaken in thinking it should have been fragrant."

[Farfugium grande is the only one noteworthy by flower growers. There are many Cactuses under cultivation named by "anybody" night-blooming Cereus, because they happen to bloom at night. The original night-blooming Cereus is C. grandiflorus, which is as sweet as sweet can be. It is such lessons as these which teach us that though botanical names are hard to learn we cannot do without them.—Ed. G. M.]

FLOWERING OF CACTUSES.—The first of six buds on Cereus McDonaldii flowered on the 6th of June with Mr. Macaulay, Ellsworth, Kansas, and about the same time one was opening with Mr. Pfifer, of Danville, Virginia. The simultanity of flowering in Cactaceous plants has always seemed surprising to the writer of this. Of several plants of Echinocactus multiplex, a very common kind with beautiful rosy trumpet-like flowers, all opened their blossoms the same day in a Germantown collection.

THE GREENHOUSE ROSE BEETLE.—A lady of

Madison, New Jersey, writes: "Will you be kind enough to give in the magazine an accurate description of the rose-bug mentioned by Mr. Henderson on p. 170 of the June number? Is it the same described by Parkman's 'Book of Roses,' p. 37? I have often heard here of the damage done in greenhouses by the rose-bugs, but I have never found two gardeners who agreed in describing it."

[The rose-bug or beetle referred to is not the "rose bug" so common in gardens, that eats the flowers of mock oranges, roses and everything else that comes in its way, which is the one referred to by Parkman; but a newly discovered pest of the rose grower under glass. It was first named Aramigus Fulleri by Dr. Horn in 1876, and is described and figured and a full account of its behaviour given by Prof. Riley at page 310 of GARDENERS' MONTHLY for 1879.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

The grape-vine at this season will require attention, to see that the leaves are all retained healthy till thoroughly ripened. It is not a sign of healthiness for a vine to grow late; on the contrary, such late growth generally gets killed in the winter—but the leaves should all stay on, to insure the greatest health of the vine, until the frost comes, when they should all be so mature as to fall together. Frequent heavy syringings are amongst the best ways to keep off insects from out-door grapes, and so protect the foliage from their ravages.

Many kinds of fruit trees that have arrived at a bearing age, may perhaps be growing very vigorously and producing very little or no fruit. Those who have read our remarks in past numbers will understand that whatever checks the wood-producing principle, tends to throw the plant into a bearing state. For this purpose, summer pruning is often employed, which, by checking the most vigorous shoots, weakens the whole plant, and throws it into a fruitful condition. The same result is obtained by root-pruning, with this difference, that by the last operation the whole of the branches are proportionately checked—while by pinching only the strong-growing shoots, the weak ones gain at the expense of the stronger ones. Presuming that the branches have been brought into a satisfactory condition in this respect, root-pruning may now, this month, be resorted to. We cannot say exactly how far from the trunk the roots may be operated on, so much depends on the age and vigor of the tree. In a luxuriant, healthy tree, one-fourth may be safely dispensed with. In a four-year-old standard pear tree, for instance, the roots will perhaps have reached 4 feet from the trunk on every side. A circle 6 feet in diameter may then be cut around the stem, extending 2 feet beneath the surface. It is not necessary to dig out the soil to accomplish the result; a post spade, or strong spade of any kind, may be driven down vigorously, describing the circle, and doing the work very effectually. Of all trees, the peach is as much benefitted by root-pruning as any.

As soon as your vegetable crops are past kitchen use, clear them out. Never suffer them to seed. In the first place, a seed crop exhausts the soil more than two crops taken off in an eatable condition; in the next place, the refuse of the kitchen is likely to produce degenerate stocks. Good seed saving is a special art by itself, always

claiming the earliest and best to ensure a perfect stock.

Celery will require earthing up as it grows, to get it to blanch well. It is not well, however, to commence too early, as earthing up tends, in a slight degree, to weaken the growth of the plants. Take care, also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

As fast as Endive is desired for salad, it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed.

In cold or mountainous regions, melons are hastened in the ripening process, and improved in flavor, by a piece of tile being placed under the fruit.

Keep weeds from your compost heaps, as they exhaust the soil, and bear seeds for future browsweatings.

Sow lettuce for fall crop, thinly, and in deep and very rich ground.

Early Valentine beans may still be sown early in the month—the soil for a late crop should be well trenched, or, if the fall be dry, they will be stringy and tough.

Cucumbers, squash, and other similar plants, often suffer from drought at this season. Cold water does not help them much, but a mulching of half-rotten leaves strengthens them considerably.

Cut down straggling herbs, and they will make new heads for next season.

Towards the end of the month, a sowing of spinach may be made in rich soil, which will come in for use before winter. That desired for winter and early spring use, is usually sown in September in this region. A few turnips may also be sown for an early crop, but will be hot and stringy unless the soil is very rich.

Corn salad is often sowed at the end of this month. It does not do so well in damp soil or low situation.

COMMUNICATIONS.

FORCING STRAWBERRIES.

BY E. C.

In answer to Mr. Thomas Fould's query upon the above subject, permit me to relate a few practical hints, which after many years' experience I have found productive of good results. In the cultivation of strawberries under glass it is of primary importance to obtain good runners of some standard variety. My own plan has been to plant a row by itself by the side of a walk or some convenient place; by this means stouter runners are obtained, and they are easier got at for the purpose of layering and watering. As soon as the runners can be handled they should be layered into 2½-inch pots, filled to within half an inch of the top, with rich mellow loam. The pots should be plunged to the rim, the runners laid in the centre and fastened there by a small twig of willow bent, or by laying a small stone upon the runner. They should be carefully attended to with water, and all surplus runners removed as they appear. As soon as they have well filled their pots with roots they should be severed from the parent plant, and removed to some shaded corner. In about a week they will be ready to be potted into their fruiting pots—4½ or 5-inch pots will be large enough for those intended for very early forcing, giving the rest 6-inch pots.

The compost which I have found most suitable is three parts rough fibry loam to one of well rotted manure, with a sprinkling of crushed bones. The compost should on no account be in a wet condition; if it will stick together when lifted in the hand and pressed, it is too wet, and used in such a state will get into that "baked" condition so antagonistic to the well-being of any plant. The pots should be well drained, and they should be potted firmly. Stand them close together for a week or so in some shaded position, carefully watering until they take hold of the new soil, and syringed every evening. They should afterwards be plunged in ashes or some such material in an open position, and never allowed to get dry, syringing them every evening to keep down red spider, applying the syringe well to the under side of the leaves, for this is where the enemy begins. When they have well filled their pots with roots, they should be watered with weak manure water two or three times a week, made either from cow manure or guano, and used about the color of strong tea. If all has gone well by October the balls will be a complete mass of roots, and that is the condition in which to get them if success is looked for. It is advisable now, if possible, to get them into cold frames, where they can be protected from heavy rains and frost, and introduced into the forcing house as required.

With their introduction into the forcing house begins the need of knowledge and carefulness on the part of the cultivator. Certain principles must be understood, for unless they are, success

is uncertain and failure probable. Forcing must be conducted slowly until the fruit is set, and especially so when the flower buds are opening. The young flower buds by degrees take on the form of calyx, corolla, stamens and pistil. They form successively in the order named. The calyx and corolla grow the quickest and most easily bear to be hastened. Stamens require more time for growth, the pistil most of all. They must all be fully developed to insure a set of handsome fruit. A steady temperature of from 50° to 55°, with a position well up to the glass and plenty of air on all favorable occasions, is found best suited to gain this end. When in bloom, if plenty of air is admitted and all other conditions satisfactory, there need be no recourse to fertilizing, except a gentle shake of the blossoms for the early batch. On the early batch from six to eight berries will be sufficient, and from twelve to fifteen on the late ones. As soon as this quantity can be obtained of good shaped fruit, all others should be removed. The temperature can now be increased until it reaches 65°. Copious supplies of liquid manure should be given and the syringe well applied to the under side of the foliage. When the fruit begins to color, no more liquid manure should be given, but if a bracing atmosphere is kept up, the syringe can still be kept going, and never once allow them to get dry at the roots. *Mount Green, Petersburg, Va.*

FORCING STRAWBERRIES.

BY A. G. LEWIS.

On page 178 of GARDENERS' MONTHLY for June, 1885, Mr. Thomas Foulds, Hoyt, Montgomery County, Pa., desires to know how to care for, and mature strawberries under glass. It is easy, with the necessary means, to have strawberries ripe all the year round. Of course, it is unnecessary to apply any artificial means to procure strawberries ripe in Pennsylvania, when her climate brings them forth in all their fine qualities. In Europe, as well as America, I have grown them successfully in the following way. I planted in boxes 6 in. by 4 ft., 6 in. deep, using two-year-old plants, always keeping them dormant on an average of six months in the year. This I did by the use of ice, using generally the ice-house in summer, when the ripe fruit is needed. About sixteen weeks previous the boxes may be brought out from their resting-place and introduced to 50° of heat, kept naturally moist, and when leaves appear, the boxes should be kept near the glass; not more than 18 in. off. This would be a proper distance to keep the plants at all times through their growing, fruiting and ripening seasons. The heat, after the leaves appear, should be increased gradually until the last or ripening season, when 65° would produce rich, nice-colored and well developed berries. When dormant the boxes should be watched so as to retain the clay in as natural state as if the crowns were frozen out-doors; the moisture of the clay the same, but still avoiding all the watering possible while the clay is frozen. No one will suffer any inconvenience by red spider on their plants who will keep a proper moisture in the house they grow strawberries in.

When the crop is gathered the boxes should be removed to some proper place to gain strength for another season of bearing. If they are done bearing, in winter they should be removed to a cool house. If in any of the summer months, to some open ground, of course. By strictly following the forcing process, any one can have ripe strawberries any day on their table, who has the glass to grow and fruit them under. I need not say to any experienced person bring to your house, a house full at once of plants. Any one should use judgment just as a lady who grows hyacinths would do; pot every week to keep up a constant succession of bloom in winter—so in strawberry fruiting. As a dozen of boxes are done fruiting, add to the house a dozen of frozen boxes. With a small glass capacity, the boxes can be kept out-doors until November and then put in a cellar or shed and removed under glass as above described. The same idea or use will grow asparagus and rhubarb. Of course, they must be kept farther from the glass. The shorter time allowed for the strawberry in foliage, the better and larger the berries and better flavored. *Youngstown, O., June 22d, 1885.*

[The last sentence in this excellent paper reminds one of the discussions a quarter of a century ago or more, as to the advantages of mowing off the leaves of strawberries. It used to be the fashion to grow the strawberry in three-feet beds, and the good old gardener, who had only the severe lessons of experience to go by, used to mow off with a scythe the leaves of the plant as soon as the fruit was gathered. He knew from actual experience that it resulted in a larger crop next year than if the leaves were left on as long as possible.

But there came along the man with his lessons from Vegetable Physiology. He knew that leaves were the lungs of the plant, and "cut off the plants' lungs," how absurd! The hard-headed

gardener could not reply. He could only point to his full baskets of berries, and stand speechless.

And so it came about that the pen was mightier than the scythe, and the man who would dare to say "mow strawberries" in these days would have the average Editor laugh at him.—Ed. G. M.]

EDITORIAL NOTES.

HISTORY OF THE SCUPPERNONG GRAPE.—At a meeting of the Chautauqua Literary and Scientific Circle, held at Aiken, S. C., recently, Mr. H. W. Ravenel observed that there are varieties of the grape which have been propagated by cuttings, true to their kind for over a thousand years! Let us illustrate this point by a familiar example. The Scuppernong grape was found growing wild over a century ago, in the eastern part of North Carolina, near Lake Scuppernong. It was so good a grape that it was brought into cultivation by taking cuttings or layers,—not the seeds. If the seeds of the Scuppernong are planted, they make generally a black grape of very inferior quality. This is the universal testimony, and I have myself tested it by raising numerous seedlings, all of which were black in color and of inferior quality. The original vine found in the woods, was therefore what we call a "chance seedling." Why it had these exceptionally good qualities we cannot tell. Among the millions of wild vines of this species of grape, growing all through the Southern States, this particular one "chanced" to be the best;—and it has been perpetuated. All the cultivated Scuppernong vines now in existence are parts and portions of that original vine found in North Carolina! And it is just in this way, that all plants capable of being propagated by division of their parts, are preserved to us.

PARIS GREEN FOR THE CANKER WORM.—The *New England Homestead* notes with surprise that so many New England apple trees are eaten by canker worm as with fire, though the *Homestead* has so repeatedly shown that a simple spraying of water with Paris green will destroy them. The reason is, the people do not read the *Homestead* or any other agricultural paper. They are of the anti "book larnin'" class. They take their church paper, and their political paper—but a farm paper, for a farmer, did you ever!

STRAWBERRIES IN FLORIDA.—The first fruit were gathered at Altoona in the first week in January. The first shipments the first week in February, of last year. A little over half an acre gave 109 bushels. The winter climate of Florida just suits the strawberry.

JOSEPHINE DE MALINES.—The irreverent descendants of Adam in England, call this pear Joseph on the palings, but it is one of the most famous of all the European varieties; and, we are inclined to think, a much better pear for American gardens than it is generally supposed to be.

DRYING APRICOTS.—This has become a very successful industry in California.

THE BRUSSELS SPROUTS.—This form of the Cabbage family, has small heads all along the main stem. It is not popular in northern gardens, because it does not endure the winter well; and the chief value of the vegetable is after frost has been on them. Those who care to protect them a little, however, think it pays. Further south it deserves to be grown to a much greater extent than it is by those who love good things.

SAUR KRAUT WITH OYSTERS.—Boil six pounds of saur kraut till tender in water with four ounces of butter and the same quantity of lard. An earthenware or a porcelain-lined pot closely covered is the best for the purpose. A sheet of buttered paper should be laid over the kraut before the lid is put on. When it has stewed till quite soft, the kraut is to be laid on a strainer to thoroughly drain. Meanwhile put in a sauce-pan a quarter of a pound of butter, a tablespoonful of flour and a pint of sour cream. Stir this till it boils, and then pour it over the kraut and shake well together. The oysters, while this is done, are to be stewed slowly, with only the addition of a little pepper, in their own juice. About twenty-five oysters should be allowed to each pound of kraut. It is then to be arranged in the dish, a layer of saur kraut and a layer of oysters alternately, with the juice poured over them. Serve very hot. Fish is also often mixed with this, particularly pike and carp. Then fewer oysters are used. The fish must first be boiled, and then pulled into pieces, taking care to remove all bones and skin. These appear to be outlandish combinations, but, in fact, they are really very good. —*Caterer.*

SCRAPS AND QUERIES.

DISEASE IN CABBAGES.—"J. R.," Elizabethtown, N. J., writes: "I am searching for information. I am a young gardener and have been

three years in the North. I have had good success in growing most all kinds of plants and vegetables. This spring I have had very bad luck with my cabbage, and the pest that destroyed them is something new to me. On the 15th of May I set 120 strong cabbage plants and they grew very fast. They had made six and eight leaves, and had hoed them by the 1st of June. I was watching for the cabbage worm to appear when I noticed the leaves began to turn yellow. I cleaned the earth away from the plant and found the root presented a rotten appearance. On examining it I found it full of little white maggots. There were twenty or thirty on the root. They had eaten every particle of root and all around the stalk, and were working in the lower leaves. I found every plant just the same. It was too late to try and save them. They are serving my radishes and turnips the same way. If you know what they are and if there is any remedy for getting rid of them, I would like to know what it is. Also, what club root is. The maggot is white with a black head. If you have space enough I would like to hear from you through the GARDENERS' MONTHLY, of which I have been a constant reader for the last three years and I find it very useful and instructive to me."

[So far as the maggots are concerned they are probably only those which always breed in decaying vegetable matter. Just what caused the roots to decay is not clear from the above account. We do not remember seeing any that presented the appearances described. Perhaps some reader with a similar unfortunate experience can tell more about it. Club root is an entirely different matter.—Ed. G. M.]

AN ENGLISH GOOSEBERRY.—Some one sends us a branch with large white gooseberries of the English race, but no note has reached us as to what it is or where from.

If it is a seedling, and an opinion is desired, we can only say that though very good we should hardly consider it equal to the average of the named kinds offered in the catalogues. The English gooseberry has already been so highly improved that there is little chance for good novelties in this line. There is more chance for successful improvement in the American race.

IMMEDIATE EFFECT OF POLLEN ON FRUIT.—By request the Editor of this magazine wrote a review of all that he could find on record relating to the chapter by Mr. Darwin, favoring the view that there is an immediate effect of pollen on fruit. This paper appears in the *Rural New Yorker* of June 13, pages 404, 416. The result of that review is, that there is no evidence that any change by pollen has ever been accomplished in fruits, though it appears that the cotyledons of some seeds—being part of the new plant—may be affected. The following letters refer to the articles in the *Rural New Yorker.*

The first is from Mr. D. S. Marvin, Watertown, N. Y. "In crossing grapes I have never observed any variation in the fruit immediately produced. I have had light colored fruit in seedlings from Gregg and Taylor, two black caps." This last point shows that change in fruits may come about even after crossing, and yet without the pollen having any influence to prevent change, much less causing it.

The next letter is from the distinguished President of the American Pomological Society. "I wish your paper on the immediate effect of pollen on fruit in the *Rural New Yorker* could have been reserved for the meeting of the Pomological Society at Grand Rapids. It is one of the most remarkable papers of the age, able, reasonable, sensible, exhaustive, and finally conclusive, that I have ever read, and I believe will be so regarded by all intelligent people.

"I started experiments with the Strawberry under glass this spring, taking diverse kinds for the purpose, and not one of them has sustained the hypothesis that there is any immediate effect of pollen on fruit."

SENDING PEACHES BY EXPRESS.—A Baltimore correspondent says: "I write at the request of my employer who places great value on your knowledge in everything connected with the business. He wants to know the most improved method of packing ripe peaches, so that they would carry safely from Baltimore to Newport, even if they were only two dozen in a package, just so they would go safely. The expense of the apparatus would be no objection. He thinks, if you were to give your views through the GARDENERS' MONTHLY, it might be of great value to others as well as himself."

[This note refers to peaches forced under glass in winter, and are of course much more tender than the peaches grown in the open air, and would require much more care than is given to the ordinary market fruit. We should think, however, that an ordinary peach crate, which is little more than a series of shallow shelves, so arranged that no peach would rest upon or press against its neighbor, is all that would be required. And of

course they must be set in their places firmly by paper or other material about them, as not to bruise by any ordinary jolting they may receive on the passage. If any one has had actual experience we should be obliged by a note thereof.—Ed. G. M.]

CENTENNIAL CHERRY.—Coates & Tool send us all the way from Napa, California, six cherries by mail, that reached us as fresh as if just gathered from the tree, and were quite as good flavored as the Napoleon Biggareau from which it was raised. They say "its chief value lies in its firmness which enables it to travel long distances." These six cherries weighed 1¼ oz., which shows that they had lost little by their long journey. They were picked on the 1st of June and reached us on the 9th. It is larger, more oblate, and darker than Napoleon.

FORESTRY.

EDITORIAL NOTES.

RAPIDITY OF GROWTH IN TIMBER TREES.—We have frequently drawn attention to the fact that there will never be a scarcity of timber in our country, because the wide-awake American will be sure to plant as soon as it becomes scarce enough to make it worth while to plant more. The old notion, derived from English works on forestry, that it takes centuries to grow trees to a profitable size, came from the fact, that the landed interest of Great Britain know absolutely nothing of forestry, and seldom learn much from outside sources. An American will learn from a single illustration, found anywhere, and profit by it. There is no need to employ no end of commissioners at equally endless salaries, in order to find out how fast our timber is decreasing, and tell us how to keep our old and half-rotten forest trees from falling to the ground: "because it takes ages to get a new supply you know."

THE CORSICAN PINE.—As some attention is being given to this pine for timber in the old world, it may serve to indicate its growth in America to note that one planted by the late Robert Buist is still growing in his grounds at Rosedale, and is at the present time 5 ft. 4 in. in circumference, and over 40 ft. high. It has a clean, straight trunk, so desirable in a timber tree, and is clothed with branches to the ground. Of course, in good timber culture, the lower branches would have been gradually taken away, so as to have a trunk free from knots, and then the tree might have been 60 or 70 ft. high. It is 35 years old.

RED CEDAR TELEGRAPH POLES.—We continually read the most astonishing statements by Europeans about things in America, and wonder why it is that every one must go from home to learn news of his next neighbor. We just took up an article by a famous botanist concerning what he saw in a recent trip to America. He tells us that the leaves of Ledum latifolium are extensively used in the Eastern (United) States as a substitute for Tea. We believe it has been used in Labrador, and therefore is known as Labrador tea, at least this may be a fair inference from its name; but it will be news to most of us that it is extensively used as tea in the Eastern States. Then we take up the London *Daily News* and learn that in the United States the telegraph poles are mainly of red cedar. We have seen some million poles, and it never occurred that any one was red cedar. We fancy red cedar could be put to much more profitable uses. Just how they get hold of these notions is the mystery. The traveller who "does" the United States in a couple of weeks or so, probably gathers all his facts from the loungers on railroad platforms, or bell boys at the hotels.

THINNING FORESTS.—English foresters are beginning to find that it does not pay to grow hoop sticks and all sorts of poles among forest trees. A forest should be all of the kind wanted for timber,—and instead of fussing about thinning should be planted no thicker than desired for the final forest.

AN ANCIENT FOREST FIRE.—Captain Zargo, a Portuguese, landed in Madeira in 1419. Dr. Fructuosa gives an account of the expedition. He says Zargo found the Island one vast impenetrable forest, and fired the woods in order to pave the way for agricultural pursuits. This fire he says continued burning for seven whole years, and this statement receives full credit in the Old World. We in America, who know how soon the most terrific forest fire is humbled by a rain storm, can only ask, was there no rain in all Madeira in these seven long years? But the woods themselves answer the question. There could not have been such woods in a rainless climate. Yet it is measurably on such "facts" as these that theories of rainfall and forests have been deduced.

THE CORSICAN PINE.—The Pinus Laricio is supplanting the Scotch pine and the larch in the estimation of English foresters. We believe the tree is less adapted to Ame ican climate than its neighbor the Austrian.

DURABILITY OF THE LARCH.—It seems too bad that after waiting some fifty years for forestry profits, the English and Scotch should find their hundreds of acres of larch an "arid waste" so far as bankable returns are in question. The timber instead of being durable as the forest enthusiasts who write books and give forestry addresses at conventions and fairs insisted, is at length proved to be "sadly wanting in durability," and they have to depend on Norway yet for "deal," as they term the timber of the Norway spruce, for all their leading work.

RAPID GROWTH OF TIMBER TREES.—We have seen in our country that it is possible to get trees large enough for profitable timber in twenty years, but not by planting them in masses as in a natural forest, but by giving them room to develop; not by taking a piece of ground unfit for vegetation, and making a forest where there was not food for even a mullein to get rich on—but by giving them ground rich in material, and wherein a plant would love to grow. There are plenty of facts that would teach this in the old world, but they do not see them, or if they do, the lessons are lost.

Here is a very interesting fact regarding one of our own trees, native to the Rocky Mountains and the Pacific coast, which we find in the *Gardeners' Chronicle:*

"As the result of an accident we were, the other day, compelled to cut down what I believe was the finest specimen of Abies grandis in this country. It was 72 ft. in height, 2 ft. 2 in. in diameter at the butt end, and it contained upwards of 70 cubic ft. of timber, all the result of about thirty-three years' growth. The wood, about which later on I shall have more to say, appears of excellent quality, and has a most agreeable perfume. That it is a rapid grower will be known when I state that several of the annual rings near the butt end measured an inch in thickness."

Here we have a tree which in a climate not favorable, from its short summer, to a rapid growth, making a tree 72 ft. high and 6 ft. round in 33 years. If it had been set thick with others in a forest, where the "profit" would be supposed to come from annual "thinnings," such a tree would have taken a century to produce. We see that even in that cool country one may, if he choose, get a profitable forest in 20 years, but still we shall read that it takes ages to grow a tree.

THE WAY TO MAKE TIMBER CULTURE PROFITABLE.—The Philadelphia *Weekly Press*, which, by the way, has one of the most ably edited agricultural departments in its weekly edition of any daily paper that comes to our table—takes exception to some remarks of ours on timber culture that appeared in our June number. It says:

"We, doubt, however, whether forest planting on a large scale would ever pay if it was done according to the directions laid down by Prof. Meehan. He would have no undergrowth and keep the forest as he would an orchard.

"'For our country,' he adds, 'a forester should set out about 200 trees to the acre; crop for two or three years in some good desirable farm product, until the trees had grown so as to claim all the ground for themselves; then let them have it, or graze if desirable, when the trunks are strong enough to take care of the tree.'

"That is, he would set the young trees fifteen feet apart. They would need to be pretty large saplings if they claimed all the ground for themselves in two or three years. Experience shows that small trees are the safest to transplant, but if not it would be impossible to use trees large enough to cover the ground in any such period when set so far apart. If seedlings one or two years old are set four feet apart they are a help to each other against the winds, and they soon shade the ground to keep down the grass, which is certainly as exhausting as undergrowth. As they crowd each other they can be thinned out, and these successive thinnings are worth much more than the cost of cutting them. Why should we treat a forest like an orchard?"

To which we have to reply that if we can make any use of the ground for more than two or three years, we certainly should,—six, seven, eight, ten or more, if it was clear that the returns would pay for the labor spent.

When we said we would treat a forest as we would an orchard, it was intended to mean, that as an orchard needed continual care for success we must give continual care to a forest if we would get all out of it that profit requires. We would set out 200 trees to the acre as in an orchard; but

"why should we treat a forest like an orchard?" that is, set the trees about fifteen or twenty feet apart? Can we not set them thicker, and thin them out, and will not the successive thinnings be worth much more than the cost of cutting them? We think not, and that it is right there that the experience of European scientific forestry has failed. It has been shown by the figures that they do not pay the expense of cutting, and it is precisely because the figures show this, that we recommend crops that will pay better. And if the Old World shows this, we in America have the more reason to abandon the "thinning" notion, because of forest fires.

We cannot get rid of the waste "brush" under the thinning system. It remains to feed the forest fire; nor can we get rid of the stumps which will continue to sprout and grow, and the roots from these growing stumps will fight with those of the trees we leave stand for a share of that food which should all go to the standing timber if we would have the best results.

Aside from all these objections is the one element of time. If we can get 200 trees in 25 years as large by the "orchard" process, as in 50 years by the thick planting and thinning process, the difference will very soon eat up all the profit we can make on "thinning."

To our mind we are about entering on an era of profitable timber culture, but it will not be by selecting ground unfit for culture; by imitating the struggling and starving incident to "nature's way" of raising a forest, or by following the "science" of the "Schools of Forestry" of the Old World. We shall have to start out entirely afresh, with knowledge gained from our own American experience.

Natural History and Science.

COMMUNICATIONS.

FRAGRANCE.

BY A. W. HARRISON.

(Concluded from page 214.)

The great bulk of Essential Oils produced consists of Lavender, Rosemary, Thyme, Sage, Spike Lavender and Sweet Marjoram. The most valuable products, of any amount, are the Essential Oils of Neroli and Petit Grain. The Neroli is the result of the distillation of Orange Flower water from the flower petals of the Bigarade, or Bitter Orange Tree; the sweet or Sicily Orange yields an inferior oil. Petit Grain is distilled from the green leaf of the tree.

The price of Neroli varies with the season, from $30 to $45 the pound, and Petit Grain from $8 to $12. These two oils are extensively used in the composition of the highest quality of Cologne water, together with the oils of the skin of the Orange, Lemon and Bergamot, and those of Lavender, Rosemary and Thyme, which should be so proportioned and combined that no one odor shall dominate.

[Here the lecturer illustrated his meaning by the exhibition of a sample of "Golden Cologne Water," composed of fifteen ingredients in widely different proportions so harmoniously combined that no one odor was distinctly perceptible, but the resulting fragrance was pure, rich and delightful to the smell.]

The Orange Flower water is consumed in immense quantities in France to flavor the "eau sucrée," or sugared water, so universally drunk in the summer season; this, by the way, is the only form in which the Frenchman drinks water at all.

The Bigarade Orange tree also yields a rough-skinned, bitter, inedible fruit, from the rind of which is expressed an inferior oil called "Essence Bigarade," often used to adulterate the finer oils. The tree requires ten years to mature, and twenty to attain perfection, and yields an average of seventeen pounds of flowers per annum.

Rose water is also distilled in great quantity. A result of its distillation is a very minute proportion of Otto of Roses, of the very highest quality; it appears in small greasy-looking drops, floating on the surface of the distilled water, which are carefully skimmed off and filtered. It is stated that in India 50,000 Roses are required to obtain one ounce of the Otto. That produced in Grasse is superior to the famous Kissanlik, or Turkish Otto, used in this country, and, like it, congeals at ordinary temperature, in beautiful transparent crystals.

I saw, at the renowned factory of Mr. Antoine Chiris, who was, in all things, the leader of his profession, a bottle containing about three pounds, which he valued at $550, or nearly $12 the ounce. It is not exported or sold, but the very small quantity produced is reserved for use in unfavorable seasons, or a partial failure of the flower crop, to give strength and finish to the Rose Pommades and Oils. The "Rose de Mai," (Rosa centifolia provincialis) or hundred-leaved Rose, is the one universally grown.

Another very costly article, of which less than an ounce had been produced in Grasse at that time, is the Essential Oil of Jessamine. In the year of my visit, 1853, an Algerian chemist obtained a minute quantity which cost him, I was told, at the rate of 17,000 francs the kilogram, about $100 the ounce. It has since been produced at a cheaper rate, but still much too dear for commercial use.

The wild Arabian Jessamine is grafted on the cultivated plant, and bears for many years, if not winter-killed, yielding from 90 to 150 pounds of flower petals per thousand plants. They are deeply covered in winter, and closely trimmed in spring.

A most important branch in which great rivalry exists, is the preparation of perfumed pomades and oils, which have a two-fold use; first, as bases for the finest kinds of scented pomatums and hair oils, and next as a medium for supplying the floral odors for extracts for the handkerchief and toilet waters. Their preparation is the most curious and interesting feature of the Grasse establishments.

The "*corps de Pommade*," or pomade body, is prepared in the winter season, and composed of 2 parts of fresh leaf lard and 1 part of kidney beef-suet, except for Jessamine and Tuberose, which is mainly of leaf lard, hardened with veal or mutton suet. These crude fats are finely hashed, washed in several waters—in the first-class factories washed in Rose water—to deprive them of all impurity or unpleasant odor, then melted in a water bath, and stored away in huge tin cans in airy, cool, stone vaults, for use in the season of flowers.

Another pomade called "*corps dur*," or hard body, is made of beef suet only, and is used to make stick pomatums.

For the perfumed oils, the material used is the inodorous, virgin Olive oil, expressed from the olives just before they are fully ripe.

The busy season commences with the Rose. There are two processes for impregnating the pomade body and the oil with the odor of the flowers: one is a hot process called infusion, the other is a cold process, termed "enfleurage." The hot process is employed for the strong, fixed odors of the Rose, Orange and Acacia; the cold process for the rich yet delicate and sensitive odors, the Jessamine, Tuberose, Jonquil and all the bulbous plants, which will not endure the application of even a moderate heat without losing their odor.

The hot process by infusion is as follows: About 100 kilograms (220 pounds) of pomade body are put into a tin-planished copper vessel, placed in a copper water-bath, and slowly melted with a gentle heat, just before the dawn; at day-break it is charged with a certain quantity of flowers freshly gathered, which are stirred constantly during the day and night, the mass being only kept warm enough to maintain a semi-fluid state. About midnight it is removed from the fire, poured into strong bags made of fish-cord, and subjected to heavy pressure in large, perforated iron cylinders, standing upright on marble bed-plates, which are gently warmed, to prevent the cooling and hardening of the melted pomade. Next morning fresh flowers are added, and the process is repeated daily until the desired strength of perfume is attained; the scented pomade is then poured into round tin boxes and sealed up for shipment. The oils are worked in the same manner, but when finished each day they are filtered instead of pressed.

The process of "enfleurage" is as follows: Large numbers of "chassis," or sashes, are prepared, about 2½ feet long and 1½ feet wide, the frame being 2 inches wide and 1½ inches thick, holding a stout plate of ground glass and resembling a large school slate. The frames for the oils are about 4 feet long, 2½ feet wide, and thick in proportion; instead of glass they have coarse iron-wire net work. The large factories have several thousands of these frames. Upon each side of the glass the pomade body is thinly spread, and the surface is channeled or furrowed lengthwise and crosswise with a four-tined, square pointed wooden fork, so as to present the utmost surface for the absorption of the odor from the flower leaves, which are thickly and evenly spread all over it. The frames, thus charged with flowers, are piled one upon another, up to the ceiling. The flower leaves thus confined between two layers of pomatum, wither and yield up their fragrance which is absorbed by the two layers above and below. Daily renewals of the flowers

are made, until the proper strength is attained. The perfumed pomade is then scraped off, very gently melted in a water-bath, and canned for shipment like the infused pomades. By a very late invention a netted wire screen, like that used for the oils, is covered with flower petals, then slid in between the glass sashes, and the whole closed in with doors to keep them air-tight.

In preparing the oils, coarse, heavy, spongy cotton cloths, made especially for this purpose at Marseilles, are saturated with virgin Olive oil and spread upon the netted frames; then flowers are thickly strewn upon them, and they are piled on one another like the pomade frames. After several daily renewals and the oiled cloths are sufficiently charged with the odors the scented oil is expressed from the cloths by powerful levers and sealed in large metal cans or bottles for shipment.

The most costly of all the pomades and oils made in Grasse are those of the Violet, which is grown mainly at Nice, about 12 miles distant, under the shade of trees, and yields a pure, delicate and delightful perfume. It was the favorite odor of the Athenians under Pericles, and is now one of the most fashionable scents in use by the Parisian *beau-monde*.

Many hundred-weights of flowers and herbs are dried annually and are used in medicine, in cookery, in the composition of scent-bags, cachous for the breath, fuming pastils for the sick chamber, and kindred compounds of the perfumer's art.

The last, and by no means one of the least important of the processes of which I shall speak, is the distillation of perfumed waters and essential oils, which is done at one operation. To explain it a single example will suffice, that of the orange flower.

The still consists of four principal parts, the *retort*, in which the substances to be distilled are placed and subjected to the action of the fire beneath it—the *worm*, through which the vapors arising from the distillation pass through the *cooler*—by means of which they are condensed again into liquid form, into the *receiver*, when they are ready for use. The retort is partly filled with water and a certain quantity of the petals of the Orange flower are added to it, and left to soak, say over night. The fire is kindled, the scented water is converted into vapor, which passes through the worm, and into the receiver. The cooler is kept supplied with cold water by a funnel through a tube which carries it to the bottom of the cooler and escapes by an overflow at the top.

The Orange Flower water thus obtained has floating upon it drops of an essential oil, of great strength, which is gathered as it accumulates, and is carefully filtered; this is the famous Oil of Neroli, so indispensable in the manufacture of fine Cologne water. In the same way, Rose water and Otto of Roses are distilled.

As many as twenty-four kinds and varieties of essential oils are distilled at Grasse, from flowers, the leaves of trees, herbs, roots, and the bark and wood also of trees. It remains for me only to speak of the perfumes derived from fruits and from animals.

The fruit perfumes are mainly those of the Orange, Lemon and Bergamot; small quantities only are made of Cedrat and Limette. These are are not distilled but simply pressed out of the peel or skin of these fruits, and filtered. They are not produced in Grasse but in the Island of Sicily.

The animal perfumes are three in number—Musk, Civet and Ambergris—which play an important part in the composition of many rich perfumes, but like garlic in cookery, should be used with such judgment and in such minute quantities that their presence is not detected or suspected.

The musk is a hairy, glandular sac, or pod as it is called, about 2 inches in diameter, growing upon the abdomen of the male musk deer, filled with a viscid paste of a highly pungent odor. When dried it loses most of its pungency and resembles coarse-grained black snuff. A room has been perceptibly scented by a single grain of it for thirty years. without apparent loss of weight, and specimens known to be one hundred years old, were as strong as the fresh article.

Civet is a resinous exudation obtained from a pouch or sac of the Civet Cat, and in appearance somewhat resembles shoemaker's wax.

Ambergris is found on the shores of Madagascar, Surinam and Java. It is the result of a disease of the liver of the Sperm Whale, and is often found by whalers in the bowels of the animal. Fine grain Musk and gray Ambergris are each worth, at the present time, about $30 the ounce.

There are many other substances that have a distinctive fragrance, and are used in the art of perfumery—mostly well-known—which my limits will only permit me to name; such as the Bitter Almond, Balsams of Tolu and Peru, Gum Benzoin, Cinnamon, Cloves, Mace, Nutmeg, Orris-root, Tonka Bean, and Vanilla.

To return, for a moment, to Grasse. The flower farms receive the highest garden culture, and great attention is paid to irrigation; in some fields at Cannes there are complete net-works of irrigating tubes substantially laid in cement. A constant warfare is waged upon insects, and each plant has its particular borer, grub or bug.

The heat in summer is intense, though tempered by the sea-breeze, and the winter is, at times, as rigorous as at Washington or Richmond.

While visiting this interesting region of flowers. I was often inwardly reminded of the vast and undeveloped field in our own sunny clime, and of the possible future of commercial floriculture in the tropical regions bordering upon our Mediterranean Sea—the Gulf of Mexico. There the wild-wood teems with the fragrant Jessamine and Magnolia; the shaded pastures are redolent of the timid Violet; the gardens load the air with the far-wafted perfume of the Rose, the Orange Flower, and all that is pleasant to the smell. But a blight was upon the people, and all the beauties and graces of nature were darkened by a pall of unrequited labor. It may not be a vain hope, I trust it may be a prediction to be soon fulfilled, that when that fair land shall be fully redeemed from the lethargy, the paralysis of human slavery, when it shall be everywhere fully open to the intelligence and energy of the Northern mind, aided by the free and self-reliant labor of the millions disenthralled, it shall then become the great flower-garden, not only of America, but of the world.

[The above is a lecture given by the well-known Secretary of the Penn. Horticultural Society, who has occupied that position for twenty-five years, as well as been its Treasurer for thirteen.

The lecture was illustrated by a varied collection of odoriferous plants contributed by the leading florists of Philadelphia, yielding fragrance in petal, calyx, stem, leaf, bark, wood or root. Also by many essential oils distilled therefrom loaned by Messrs. Wright & Sullivant, as well as fragrant pomades from the South of France. An interesting object was a stuffed pair of dwarf Musk Deer and a pod of genuine Musk 25 years old. At the close, each person present received a tiny sample of Extract of Tea Rose, prepared by the Lecturer, as a souvenir of the occasion.

It was very highly appreciated by the intelligent audience that had the pleasure of listening to it.—Ed. G. M.]

COMMON NAMES OF NATIVE PLANTS.

BY MRS. J. S. R. THOMSON.

I sympathize deeply with our Florist friend, who recently sent to our genial Editor to help him out, the list of plants bearing such names as Lizzard's Back, Dutchman's Breeches, &c. When I have found a particularly beautiful and desirable native plant, I meet with just such names. Recently I have turned my attention to our native Flora, which has so much worthy of introduction into our gardens; and last winter, fall and spring I have been tantalized almost to distraction when I appealed to the natives for names—local, I mean—I never dare hope to gain the botanical cognomen. I found in one ramble a low-growing shrub (never over 10 feet) with the most brilliant glowing blood-red twigs, and found it so beautiful, denuded as it was of foliage, that I collected a dozen specimens and carried to my kitchen garden and planted; all now growing beautifully. I asked several persons its name, and one and all replied, Swamp Dog-wood (Cornus), and I at once jumped to the conclusion, woman-like, (Who is it says, "a woman arrives at her conclusions intuitively, a man by reasoning?") that it was Cornus sanguinea, until our long-suffering, patient, forbearing Editor set me right again. How many more stupid mistakes will I make, I wonder? But he did not tell me what it was. The plant is now in full flower, has flat panicles (like Laurustinus) of very fragrant pure white flowers, four petaled, quite attractive, and a profuse bloomer. If this had no other attraction it would be desirable; but its brilliant red twigs, glistening as if freshly varnished, would add much to our lawns when stern winter holds high carnival with us. I would much like to have the real name. In gathering huge clusters this A. M., I met a native, and asked him the name. He replied, Possum-fruit—meaning an opossum—a wild four-footed native here, which is much relished by Southerners, dressed as a three-months' old pig or shoat is, stuffed and roasted whole, served with sugary-backed sweet potatoes. Our beautiful South land is rich, bountifully so, in native plants; vines, tubers, bulbs and shrubbery amongst them. Azaleas and Rhododendrons, that fairly rival the exotic ones, in buff, white and rose; Gelsemium sempervirens (Carolina Yellow Jasmine), that puts to the blush the highly-lauded and overrated Clematis; Yucca filamentosa (or pendula) in June, with clusters of flowers, stalk full 4 feet high, with hundreds of its creamy white tulip-shaped, fragrant blossoms loading the air with a subtle perfume. No wonder Southerners are indolent. Our flower-perfumed atmosphere is enough to intoxicate one, as hashish does the Oriental. I love to write of this beauteous South, where my home is, and where my grave I hope will be.

Spartansburg, South Carolina.

[The common name of this plant in the South

is "Red Osier," though some will contend that it is a pity osier is not wholly kept for willows. But if we must have popular names, we must take what the people give us. Just so some will argue that the Carolina Jasmine is not a Jasmine, or the Tulip poplar not a poplar at all.

But to return to the Dogwood. Botanically it is Cornus stolonifera. It bears white fruit, and hence is often called in nurseries White-fruited Dogwood. It is not safe to call it Red Dogwood, because there are a number of Dogwoods with red twigs. Cornus sericea has red twigs, and so has the European species, Cornus sanguinea, which is usually called English Dogwood in nurseries.

The great beauty of the Red Osier in landscape gardening is well known, and it is very popular with the profession for making ornamental winter groups.—Ed. G. M.]

FERMENTIVE ACTIVITY AS AN IMPORTANT FACTOR IN THE ECONOMY OF THE CREATION.

BY WILLIAM CREED.

It is not usual in writing a series of papers to close with what should have been more properly the initiative; but this having happened more through accident than intention I trust it will be overlooked, especially if any satisfaction should be gleaned from the continuance of a subject that is daily attracting the attention of some of the best intellects of the present age, and of as much importance to the nurseryman, horticulturist, gardener, farmer, vinyardist and others interested in land culture of whatever name, as it is to the medical student, who is professionally led to inquire into and study out the various phases of fermentation as it affects the human race in place of that of the vegetable kingdom. It has thus occurred to me that the readers of the GARDENERS' MONTHLY should be occasionally reminded of those infinitesimal beings that float in the air we breathe and have an immediate bearing upon the problems that accompany success or disappointment in the callings above indicated, as well as no small portion of the world at large.

The study of fermentive life is one of primary importance, and yet we are well along in the nineteenth century before discovering any trustworthy knowledge or guidance in this direction. If I were to query any cultivator of the soil concerning his straw heap or manure hill as to what brought either to a desired condition so that it could be successfully applied to his land, a vague answer may be anticipated. Would he suspect that it was a living organism working at it in its own special field of usefulness to accomplish decomposition—a fermentive life action—the same in method that influences the disintegration of a lifeless team, an uprooted tree, and reducing them all to a quality that will tend to revivify the earth? Surely the land manipulator's occupation would be gone were there no provision in the creative wisdom whereby defunct animal and vegetable matter, or the debris of the world generally, could undergo transmutation in some simple way and be again utilized. In a recently published paper Dr. Wall lucidly defines this point by stating that "some of the ferments induce putrefaction and decay in dead organic substances, thereby reducing the original components of these tissues back to the simpler inorganic compounds, or to the elements, so that they may again be taken up by plant life and again started on the round of organic life; and it is only when these ferments overstep the intended boundary mark and attack living plants and animals, directly or remotely useful to man, or even man himself, that they become injurious."

From the foregoing indications it may be well to demonstrate a few facts as touching the case of those to whom this paper is addressed, and whereby this fermentive life may be known and investigated, remembering first that the decomposing influence mentioned above is from a specific germ which always produces the same effects and distinguished as "bacterium termo;" and in contrast with this let us turn to one of alcoholic notoriety and classified as "torula cerevisiæ," which also invariably brings forth the identical result. The activity of this germ depends upon coming in contact with "sugar," which it decomposes, and alcohol is one of the resultant effects. The vinyardist may in this case be selected to illustrate in a practical way the results produced from the presence of various ferments, which are not only attached to the grape on its outer surface; but there are numerous others on the *qui vive*, and are ready to act their part immediately upon penetrating the skin and expressing the juice. Pasteur, the great experimentalist, has proved that it is not by the "interior" of the fruit coming in contact with "pure" air that it acquires the power to ferment; but it is the adherent particles or germs on the exterior that produce the fermentive accompaniment, and "turned" wine is traceable to this origin. Seek out the cause of "bitter" wines; again you have the surface of the grape to demonstrate the specialty; as also the so-called acid, sharp, sour, greasy and other wines. Pasteur's remedy for all these difficulties is "heat" whereby the germs are all destroyed, and by this means a perfectly limpid and lasting wine is secured.

The fruit-grower and propagator, like the wine-maker, have many perplexing questions to contend with, and as yet but partly solved, and probably no small part of these originate from fermentive contact. If I seek for a definition of pear, apple or quince blight, we find no one quite positive as to its origin. It certainly would not be unreasonable to attribute it to fermentive life—a leavening of the sap by absorption from without, by means of some parasitic contiguity. At any rate this has been my opinion for years, and so published it in the *Fruit Recorder* as far back as November, 1877, and thus offering a new field for the scientist to work upon and giving an opportunity to the ambitious to attain fame by the study of micro-botany in clearing up the doubts of a very prevalent tree disease.

The gardener, of course, has difficulties in germ life, and especially in unhealthy seasons; but, so far as many vegetables are concerned the process of cooking destroys all vitality; while those that are consumed uncooked usually undergo a thorough ablution in water, and in this way removing any predominating germ influence upon the consumer. It is in the decomposition of vegetables from causes previously mentioned that the vegetarian need be cautioned, and not when plucked fresh from the field or garden of the grower.

The farmer may have his attention called, independent of germ influence upon the straw stack, to several important items with which he is largely interested. Milk is a prominent one, and is influenced in many ways by germ ferments, and there are at least a dozen organisms changing the condition of milk. One will gelatinize or coagulate milk, another absorb the sugar of milk and convert it into lactic acid, and these in turn can be changed by impregnating with other germs. Milk is also often turned blue by a special ferment, and when once this blue visitor appears, it is difficult to extirpate it. The cholera bacillus is also at home and thrives in milk, but can be readily destroyed by heat. Cider and vinegar are also affected with surrounding germ influence, and may be good or bad according to circumstances. Pasteur has demonstrated also the fact that flies influence the spreading of certain ferments, and are to be found in all places where vegetable matter is turning sour, and with their feet and probosces transport the seed by the million. He says: "In vinegar, in wine or suspended air, everywhere around us, in our towns, in our houses, there exists the little plant, *mycoderma aceti*;" and adds that it is only necessary to put wine or vinegar into a warm place and the flies at once appear and distribute the seed *ad infinitum*.

That flies have a legitimate errand to perform in many ways will not be disputed; yet under certain well defined laws they can accomplish much mischief, when having free access to fermentable matter, by spreading disease. The foliage of trees suffers materially from this cause, by implanting a foreign nucleus upon its surface, which in time permeates the whole texture of a leaf to its destruction, and prematurely influencing the proper ripening of the fruit. This is especially noticeable among plum and peach foliage.

In conclusion I would ask: What is human digestion but a series of ferments, healthful or otherwise, and characterized by surrounding conditions, and in this way establishing a continuity of fermentive influence, link by link, from the lowest animal or vegetable organism to that of man, the noblest work of the Creation, and opening up a field of study of great interest and worthy of continual investigation?

59 Gregory Street, Rochester, N. Y.

[We are glad to have these very suggestive and profitable themes kept before our readers. On the solution of many of these problems innumerable practices of immense concern to the human race depend. At the same time it must be remembered that immense losses occur to communities from practicing on half-learned problems. By way of illustration: The city of Philadelphia has a hospital for contagious diseases. The physician in attendance had $1500 a year. The "Baccilians" of the "Comma" persuasion so thoroughly frightened the city, that his salary last January was raised to $2000, because he would have his hands full of cholera patients. Here we are on the first of August not only without cholera, but with one of the healthiest seasons known for a long time; so much so, that at no time has this hard-worked physician had more than six patients in the hospital at one time. Worse than all, it has recently been discovered that the "Comma Bacillus," in the germ state, is always present here. It has not to be introduced. We take it in with every breath,—and it requires some peculiar condition of the atmosphere or of the human system to make it sprout into virulence. In its usual state of vital power the digestive or pulmonary system can take in and destroy all these ferment fungi. No one need

dread them in the least. We may drink them, or we may eat them, or inhale them; vegetarians, flesh eaters, wine or water drinkers; and they will not harm us, unless vital power is too weak to kill them. The ferment fungus — yeast — will worry the wet flour considerably in bread making, because the flour is no longer a living thing. It would have hard work to excite the growing grain. In all these chemical discussions, the sustaining and protective power of life is overlooked. There is a physiological as well as chemical side to all these questions.—Ed. G. M.]

ZEPHYRANTHES ATAMASCO.

BY MRS. J. S. R. THOMSON.

Whilst on my daily visits to my beds of these fairy lilies, I was astonished to find specimens that had four calyxes and four corollas instead of the regular number, three, and have taken them up—and carefully put in a box—and by advice kindly given me by Prof. Sereno Watson, Harvard University, Mass., I am going to attempt the—to me—difficult task of making it a permanent variety. I find eight or ten plump seed pods now, and would be very grateful for any hints as to the proper mode of procedure, either from the Editor or others. This bulb is the most wondrous seeding variety I have ever met, scarcely a flower fails to make its seed pod, and I propose saving in quantities and seeing if "Improved Zephyranthes Atamasco" also cannot be had by raising from seed; as a florist claims that he has improved Zephyranthes Treatæ. (Mr. Watson says, "we have no real Amaryllis native here.") I have just examined these seed pods, and one is four-celled instead of three; all the rest are three-celled, and I would reason it out that the four-celled will be the one to set my double variety.

[All the early botanists made this plant an Amaryllis, but as the knowledge of plants extended a new genus was made out of the old, and thus we have Zephyranthes. Amaryllis, it may be remembered in classical story, fled from Zephyrus; and it seems too bad that after the many thousands of years since the gods dwelt on Mount Olympus, that Zephyrus should get Amaryllis after all. The seed ought to grow easily, in your soil and climate, in sandy soil, sown at once.—Ed. G. M.]

EDITORIAL NOTES.

ON THE DISAPPEARANCE OF PITH IN THE WOOD OF PLANTS.—Some years ago Mr. Thomas Meehan called the attention of the Botanical Section of the Academy of Natural Sciences of Philadelphia to the curious fact that when trees of Elder, Paulownia, and other trees that had a very large pith in the young shoots, had comparatively little or none when the young shoot became an old trunk or branch. Wood had evidently been forming in the center of the tree occupying the place of the older pith.

Dr. J. T. Rothrock, at the meeting of the Botanical Section held February 9, called attention to the internal cambium ring in the stem of Gelsemium sempervirens. It might well be designated as the inner cambium. His attention was attracted by the fact that in a stem of three-eighths of an inch diameter, the pith was actually less in diameter than in a twig of a quarter the size of the stem. Microscopic examination showed that in the larger stem there were ordinarily four or more points, at which a well-defined swelling curved inward from the circumference of what should have been the pith-cavity. These swellings resolved themselves when closely examined into:

1. Toward the center an imperfectly defined membrane, resembling cuticle, which was not always present.

2. One or more rows of large cells like the parenchyma we find under the epidermal layer.

3. Several poorly defined layers of smaller cells, such as often mark the limits of growth in bark.

4. The frequent presence of bast fibres or of sclerenchymâ cells.

5. An evident layer of thin-walled, square cells, closely resembling, though somewhat smaller than those of the external cambium. They showed signs of division, which indicated that they were still a living tissue.

These facts explained at once why the pith was constantly being encroached upon until it at length almost disappeared. The medullary rays dipped down through, and widened out, in this inner cambium, inwardly, just as they did outwardly, in the usual form of cambium layer. He also remarked that bast fibres had long been known to exist in the pith of Tecoma radicans, and in this case something like an inner cambium would be found, though it is more obscure. Sambucus Canadensis also exhibited in the very large stems a smaller pith than in those of moderate size. In this there was nothing comparable to the inner cambium. He also remarked that for the past two winters his attention had been called to the presence of considerable quantities of chlorophyll in the pith of Lycium vulgare. This was not confined to the smallest stems, but was found also in those of over a quarter of an inch in diameter, and where of course a considerable belt of hard wood was found between the pith and the outer zone, where chlorophyll is expected. It was also observed in Lycium that the chlorophyll was not in the form of bodies but diffused in character, as it is said to be in some infusorians. In Lycium the cells of the pith showed, in winter, abundance of protoplasm which had the nucleus on one side and very striking bands extending thence across the cell to the further side.

THE WILD FRUITS OF COLORADO.—A lady, Marion Muir, contributes to *Vicks' Monthly* some very interesting facts regarding the wild fruits of Colorado, less valuable than they might be, because one can scarcely know what is referred to in consequence of the want of botanical names. These we will endeavor from the descriptions to supply. Plums do not ascend the mountains, but hug their bases from the plains; it is probably the same as the Beach plum of the East, Prunus maritima. which the Editor has gathered in that region. The choke cherry is not the one of that name in the East, Prunus Virginiana, but Prunus demissa. It is worthy of note that the Editor has seen this in this mountain region as fully covered with the plum knot as in the species common in the East.

There are three kinds of wild currants—red, yellow, and black, she says. The wild mulberry is not Rubus odoratus, as she says, but Rubus deliciosus. The fruit is insipid, but "eaten by children and Indians." "The squaws used to gather all kinds of wild fruits, pound them up with a flat stone, and dry them in cakes in the sun." The Poison currant, loaded in July with scarlet berries, sweet and pleasant but with a bitter skin, causes drowsiness and nausea but no fatal results, is, probably, the aromatic Rhus, Rhus aromatica. The small red cherry found in the mountain gulches, is, doubtless, Cerasus pumila—the Sand cherry of the East—and which we have had even from the Wahsatch range. The "wild grapes, Mustang grapes, are above the water courses, small, acid, puckerish fruit, often in heavy clusters," is the Vitis Arizonica of Engelmann. The Oregon grape, Berberis aquifolium, is the variety repens, and "is used for cooking by some housekeepers."

DRINKING WATER, AND CESS-POOL NUISANCES.—The nitrogenous matters in bad water are just what plants like to feed on. Plants in streams tend to purify the water, and the roots of trees around cesspools feed on matter that might, but for them, get into the wells of drinking water near by. A weeping willow near outbuildings, has a much mightier influence for good on the health of those in the vicinity, than by the mere shade which it affords. In all the worry about drinking water which the mere chemist makes, the public forgets to take counsel of the biologist. Nature has so nicely balanced her ominiscient forces, that though the chemist can show us that we are everlastingly in danger of destruction, the physiologist knows that she is only in fun; and that though she dangles us over the abyss with one hand, she takes care to catch us with the other.

A WATER PLANT CATCHING FISH.—The bladders of the curious water weed—Utricularia—still occupy the attention of the curious in the Old World. The fact that these bladders caught living things was first observed in this country by Mrs. Mary Treat, of Vineland, N. J.; but the fact does not seem to have at racted the same wonderment in America as in the Old World, where it is a continuous topic with newspaper writers. The bladders are very small, not much larger than small bird shot, and when the magazines which love to put the sensational into scientific topics talk about the plant being a dangerous enemy to the fish culturist, we have to make all due allowances. Very small fish are caught, and larger ones, as Professor Mosely says, held by the tail till they die; but these unfortunates will be but a small portion of those that would be caught and eaten by the larger fish. Very few of the immense number spawned reach maturity, plentiful though the stock may seem to the fisherman. For what purpose the bladders catch the animalculæ and minute creatures is not known, if, indeed, there is any special purpose of this kind. Professor Mosely says that it has not been found that there is any digestive operation going on, as it is believed there is in some of the carnivorous plants, more properly so called.—*Independent.*

EARLY BOTANY IN PHILADELPHIA.—Bartram began his garden in 1728. Peter Kalm, for whom the Kalmia was named, settled in Philadelphia in 1748. Dr. Adam Kuhn, the first Professor of Botany in America, and for whom is named the Kuhnia, settled in Philadelphia in 1768. In 1773, Humphrey Marshall, commemorated in the Marshallia, and the author of the first botanical work in America, commenced his botanic garden at Marshallton.

FERTILE HYBRIDS.—After the full account of the want of sterility in hybrids, which appeared in the *Independent* some months ago, nothing further is, perhaps, deemed necessary; and yet it may be useful to place on record any remarkable cases as they arise. It was stated in that account, that among gesneraceous plants, our conservatories teemed with cases of fertile hybrids, not only between very distinct species, but also between genera. Another very striking illustration of this has recently been introduced, the work of a German florist. It is a hybrid between Gesneria Donckelaari, and one of the common greenhouse gloxinias. It will not, for an instant, be contended, that, under the strictest idea of genera, these are not wholly distinct. But the genera have not only been made to unite, but the hybrid produces seeds freely, and seedlings reproduce the hybrid parent exactly. The florists have named it Gloxinia gesneroides; and the fertile seed is put into the market as a regular item of commerce. Cases like these present considerations the strongest scientific man may well hesitate to grapple with. First, the idea of genera as something distinct from species becomes confused. The florists have turned the plant into Gloxinia; but it would be difficult to say just how much is Gloxinia, and how much Gesneria. Second, there is no more reason why a plant of a Gloxinia, in a state of nature, may not get the pollen of a Gesneria through the agency of an insect, or some accident. If the seed get the chance to grow, we have such a hybrid as this. If the hybrid get the chance to raise its seeds, and the seedlings proved as constant as these have so far proved, we have in nature a very distinct species that did not exist before—a new species originated by hybridization. It is not only not impossible, but highly probable, that such instances have occurred, because everything is favorable for just such a conjunction of circumstances. It is perfectly safe to conclude not only that there is a continual creation of species, but that hybridization is one of the agencies through which the new forms are introduced.—*Independent*.

SCRAPS AND QUERIES.

HYBRID BETWEEN ROSE GERANIUM AND PELARGONIUM.—Mr. Ernest Walker, New Albany, Ind., writes: "In the manuscript of my article "A Hybrid Between the Rose Geranium and Pelargonium," page 199 July number GARDENERS' MONTHLY, I indicated the cross—Rose Geranium × Zonale Wonderful, and Rose Geranium × Pelargonium Lady Washington, which it seems the printer did not understand, and for fear others may not understand the printer permit me to explain. I meant, Rose Geranium crossed by Zonale Wonderful, Rose Geranium crossed by Pelargonium Lady Washington."

SELF-FERTILIZATION IN THE FIG.—"F. B.," Stockton, California, writes: "So much is said about the necessity of cross-fertilization in flowers, I wonder how the fig manages, that has no open flowers at all. Surely insects can bring no pollen here."

But those who argue for the necessity of cross-fertilization do not hold that flowers never fertilize without foreign pollen. They only hold that in some way they have not however explained, cross-fertilization "must be" a benefit. And then they hold that some flowers would never be fertilized at all, but for this extraneous aid, which is true also. It is very difficult for many flowers to receive their own pollen, and it is on this account that some value has been assumed for cross-fertilization. If, as our correspondent has the idea, it really were a belief that plants must have foreign pollen to bear fruit at all, or to be in anyway dependent on insect or other agencies for pollenization, the fig would certainly be a good illustration of the fallacy; for the male flowers near the apex of the fruit discharge abundance of pollen which, falling on the female flowers at the base, furnish all the pollen they require, and indeed every Californian knows that he has abundance of fruit without insect agency. Centuries ago it was thought that a small fly had an influence on getting a full crop, and they used to bring the flowers of the wild fig in which the insects were numerous to the flowers of the cultivated fig, and called the process caprification. They found trees that would bear perhaps only twenty-five pounds, would yield perhaps 300 pounds by this care. But this practice had no reference to pollenization.

They thought the figs did not set because the vigor of the tree was unfavorable to fruitfulness, and they thought the puncture of the fly aided fruitfulness by giving vegetative vigor a check; and they were probably right. Gardeners to this day are well aware of this principle. Not only will the puncture of an insect hasten the maturity of a fruit; but we have to ring, transplant, prune, freeze, or otherwise maltreat an over vigorous plant, to get it to bear at all.

LITERATURE. TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

OUR LADY'S GARDEN.

BY R. A. OAKES.

I.

In his letter to Apollinaris, Pliny the younger gives us a charming description of the garden surrounding his villa in Tuscany. From it we derive nearly all the knowledge we have of the Roman viridarium. We see "the trees topiaried in every conceivable form, the tall planes enjoying a borrowed verdure from the ivies twining around their trunks, and in their inner walks we are greeted with the perfume of roses." For the next fifteen centuries we get unsatisfactory glimpses of rural occupation, either in field or garden. In mediæval romances the garden is frequently painted—but always as the background for tender lovers, or for social intercourse and out-door recreations. Birds innumerable flit to and fro in these pleasure grounds, flowers burgeon and scent the air, and fountains throw their sparkling waters in the sunshine. In the "Roman de la Rose" one of the most famous of these gardens is described. Chaucer never tires of dwelling on the "beauté of the gardyn." But beyond the songs of birds and the scent of flowers, we know little of these earthly Paradises.

During the long night following the extinction of Roman civilization, agriculture could successfully be pursued only on lands belonging to monasteries. The husbandman who sowed could never be sure of reaping the harvest, and the condition of the adscripti glebœ was one of unmitigated misery. The nobility and the abbots united in laying extreme burdens upon him, though the latter did not disdain to share his burdens. Gervaise tells us that Thomas à Becket, even after he was Archbishop of Canterbury, used to go into the fields with the monks, and assist them in making hay and reaping grain; and from Bede we learn that Easterwin, abbot of Weremouth, guided the plow, winnowed grain, and forged instruments of husbandry on the anvil.

In his monogram on "English Plant Names," Professor Earle discovers traces of an old acquaintance with latin herb lore, and from it infers that the knowledge of Roman botany and medicine came into England with the Roman missionaries, and formed a natural accompaniment to their religious instruction. During the earlier centuries, the knowledge of the therapeutics was confined almost wholly to the monks; and in the capacity of surgeons they attended the Crusaders in their attempts to rescue the Holy Land from the hands of the infidels. To prayer, holy water, pilgrimages, touching of relics and other faith cures, they added a knowledge of the medicinal properties of plants. But while the flowers of the field entered into the monkish materia medica, the Fathers made strenuous efforts to keep them from entering into the religious worship of the Church.

In the ceremonial worship of the gods, flowers and trees, from remotest times, have played a prominent part. In the epopee of Izdhubar, Eabani consulted trees for oracles. From the Bundahis we learn "that every single flower is appropriate to an angel;" that "the myrtle and jasmine are Auharmazd's own." Flowers strew the pages of the Hindu epics; the Greeks and Romans used them profusely as religious offerings, while to the Scandinavian gods whole parterres of bloom were dictated. From their universal use in pagan worship, the Fathers forbade their entering into the service of Christ. St. Ambrose, in his funeral oration on Valentinian, says: "I will not sprinkle his grave with flowers, but pour into his spirit the odor of Christ." Tertullian says "that a Christian should rather suffer martyrdom than wear a garland," and in his work "De Idolatria," he "calls on the name of God to witness that he knew a person who had been grievously chastised in a vision, because a servant, though without his knowledge; had crowned his door with flowers on a day of public joy." Clement of Alexandria tells us that is "not suitable to fill the wanton hair with rose leaves, or violets, or lilies, or other such blossoms."

But the instinctive love of flowers was too strong for priestly interdiction, and they soon took their appropriate place in religious observance.

There still exists a plan of the garden of the monastery of St. Gall, in which the parterres are marked, and the flowers to be cultivated designated in each. Long after the destruction of the sacristy, the flower garden, adjoining the Lady Chapel at Winchester, went by the name of Paradise; and, in the will of Henry VI, particular directions are left for the cultivation of "certaine trees and flowers behovable and convenient for the service of the church" of Eton College.

Montalembert has drawn charming pictures of the serene beauty and tranquility of these monkish gardens, frequently set in the midst of untamed woods and mountains, and commanding nearly always the view of sparking waters in river or lake. The Benedictines and Cistercians were pre-eminently the gardeners of the middle ages; and to them are we indebted for the preservation of many of the old-time floral favorites—anemones and flowering almonds, marigold and wall flower, and many others equally dear, brought, long ago, by pilgrim monks from distant Syria. Even if there were no records of monkish gardens, the saintly names given to herbs and flowers would be all-sufficient proof of monkish gardens. The angelica—in old German called root of the Holy Ghost—Grimm tells us was revealed in a dream. Du Bartas calls it the "happy counterbane, sent down from Heaven by some celestial scout." The Laplanders crowned their poets with it, believing it endowed them with a divine afflatus. The Lamium album, from its heavenly virtues, was, Parkinson tells us, called archangel; the Geum urbarium, herb benedict, because the Devil could not endure its presence; and, from the legend that it stanched the blood of the Saviour in His last agony, the Verbena officinalis was called herb of the cross. The Scabiosa succisa received the popular name of Devil's bit, because when deprived by the Virgin Mary of his power to use the root for evil, in spite he bit off the end, and it has never grown again.—*In Independent.*

THE WORD, SHAMROCK.

BY W. R. GERARD.

In answer to a query as to the meaning of the work "Shamrock" (page 221, GARDENERS' MONTHLY), I would say that it is from the Irish, seamrog (Gaelic, seamrag), a diminutive of seam, "mild," "gentle," and might be translated "little gentle one."

In Ireland, Trifolium repens and Oxalis acetosella are often confounded under the same name, but seamar bhan, "the fair gentle one," is invariable for the Trifolium.

[In the editorial note (page 221), it reads, "It was not long after the event is believed to have occurred that it was made public and celebrated." The word "not,' was an unintentional slip; as it was long after that the event became celebrated.

From our correspondent's note it would seem that the Trifolium, white clover, is most likely to be the true shamrock of the Irish people. The only error will be in assuming that St. Patrick converted the pagan with the shamrock or clover. If with anything it must have been with the Oxalis, which is probably not the original shamrock.

Another interesting deduction is, that if the white clover be the shamrock, the universal use of the plant in connection with the legend of St. Patrick would seem to show, that the celebration of the event in this way, must have begun long after the Saint had converted the chief; and not until the introduction of the white clover to Ireland. —Ed. G. M.]

FLORAL NOTES FROM WASHINGTON.

BY M. H. LESTER.

I expect you will be surprised to hear from me under the above heading; but I have not felt so well for some time past, and thought I would try some place where the thermometer does not average so high as at New Orleans, and the mosquitoes are not so large and numerous.

I consider this a very beautiful city to live in. I had almost said to die in—but I trust I shall not put it to any such test yet awhile.

The plants in the Capitol grounds have almost grown out of my memory in three years. A very interesting day could be spent there by anyone loving arboriculture, particularly for ornamental purposes.

I have never seen the grounds around the Agricultural Department look so well. Several improvements have been perfected since I was here last, and others are under way.

Congratulations are pouring in from all quarters on the worthy Superintendent of the Botanic Gardens, W. R. Smith, on his convalescence from his recent severe illness—which, of course, all his friends will be delighted to hear.

I notice in the Orchid house some pretty things in bloom. Cypripedium Laurencianum, C. ciliare, C. superbiens and others; Oncidium sarcodes, and O. hastata; Dendrobium tortile roseum, D. moschatum, Cattleya Gaskelliana, Maxillaria gra-

minia. A fine piece of Epidendrum Odoratissimum, with seven spikes, that perfumed the whole house; Vanda suavis, Vanda tricolor formosa, and Vanda teres—two good pieces.

Some fine specimen plants, particularly Palms in tubs, are standing outside the grounds for the summer. This is a good way. One can see them so much better than when crowded together in the house. And how they seem to enjoy a shower!

NAMES, WISE AND OTHERWISE.

BY MRS. FANNY E. BRIGGS.

I feel sympathy for the correspondent who is seeking light on that list of outlandish names given on page 155, May number. I think, that the "Sheep's Horns" is Martynia proboscidia, also called "Devil's Hooks." "Aaron's beard" is, I think, a white drooping spiræa, but cannot give specific name. The "Sun-dial plant" inquired for some time ago, is no doubt the garden Lupine which is often called by that name, also "Old man's face" and "Monkey face," from the grotesque face on the seeds. My school-mates used to vex my soul by calling Spring Beauties, (Claytonia) "Puppy's foot flowers" from the form of the root. A lady once wrote to exchange plants, offering among other things, "Proud Lucifer, white and blue;" which proved to be common Iris, her name of course a corruption of Flower de luce. My first introduction to Gladioluses was as "Gladnesses," and I knew an old lady in Iowa who called them "Olluses," and the beautiful Calystegia, "Cast Ages," and I think enjoyed them even with these barbarous names.

The pretty rose, "York and Lancaster," described in a late GARDENERS' MONTHLY is abundant here, and known as the "Calico Rose." I am much obliged to Mrs. Thomson for giving us its pretty and romantic name.

THE WITCH HAZEL.

BY W. R. GERARD.

In a quotation from Mr. L. H. Bailey's book (on page 220) it is intimated that the name wych-hazel (or witch-hazel or elm) for Ulmus montana is due to the wood having in olden times been used in the construction of wyches or chests. That is Dr. Prior's explanation of it. The Old English wyche, wiche, is from A. S. Wice, from wicen, pp. of wican "to bend" (whence also wicker). The name alludes either to the branches of the tree being pendulous, or, more probably, to their having in olden times been used for making long bows, the archer esteeming them next to those of the yew for that purpose. *Clinton Place, New York.*

EDITORIAL NOTES.

TO INTELLIGENT CORRESPONDENTS.—*All communications relating to advertisements, subscriptions, or other business, must be addressed to the publisher, 814 Chestnut Street, Philadelphia.*

All referring to the reading matter of the magazine must be mailed to the editor, Germantown, Pa.

No express packages for the editor received unless prepaid; and marked "Paid through to Germantown, Pa."

PURCHASER'S RISK.—A question of great interest to agricultural and horticultural pursuits was recently decided by the Supreme Court of Pennsylvania, Justice Gordon giving the opinion of the court. A Pennsylvanian bought from a firm in Dubuque 140 tierces of pork. The purchaser received, opened, and thought it good; but a week or so afterwards found the whole unfit for sale. There could be no doubt but the seeds of decay were in the pork before it was sold by the Dubuque firm. The court of Common Pleas, No. 3, of Philadelphia decided that a man ordering pork expected to get good pork; as this was not actually good pork, the seller must return the money paid. The Supreme Court sets aside this decision. There was no warranty, it says, for good pork. The only question involved is, was it salable? That it was salable is proved by the fact that the buyer accepted it, and discovered nothing the matter with it for some time. The buyer had as good a chance to see whether there was anything the matter with it as the seller. Unless there was a distinct warranty given that it was perfectly sound, it is the purchaser's risk. That he expected sound meat, had nothing to do with the question. The decision of the lower court was reversed and the buyer lost his case.

HONORS TO M. RODIGAS.—European governments delight to honor horticultural editors. The Spanish government has made our Belgian Colleague a Knight of the Royal Order of Isabella the Catholic..

JAY GOULD'S CONSERVATORIES AT IRVINGTON ON THE HUDSON, N. Y.—A correspondent of the *Country Gentleman* notes that there is a large orchid house, and fifteen houses in the whole

"Conservatory range." There are four vineries, three of them with peaches on the back walls. A palm house has 320 species of palms. The first cutting of hot-house grapes was about the end of June. Peaches were ripe in the early part of June. Peaches have not been found to do as well for forcing on plum as on their own stocks. There are separate houses for camellias, roses, ferns, and geraniums. Mr. Mangold is the gardener in charge.

THE GREENHOUSES OF DENNISON BROTHERS, OF PHILADELPHIA.—Mr. J. Wooding notes as showing what intelligent industry will accomplish, that only twelve years ago, the head of the firm located at Belmont avenue, near the city line, with only capital enough to build two small greenhouses. Now they have twelve, three of which are 150 feet long. These are devoted to winter roses—Mermets, Perles, Niphetos, and Duke of Connaught—but a leading specialty is the growing of pot plants for dealers. One house was wholly devoted to Heliotrope. Another had over a thousand Fuchsias in 6-inch pots, and when coming into flower was a lovely sight to see. In one house were Verbenas, estimated to be over ten thousand, and, also just at the blooming point, presented a picture of great loveliness, unsurpassed perhaps, by any floral sight of the season. Geraniums and bedding plants are also sold in immense numbers; and in spite of the general feeling with florists that there is nothing in bedding plants, at modern prices, these enterprising young men find satisfactory encouragement, and propose to largely extend their works.

A GOOD GARDENER AT LIBERTY.—We understand that in consequence of some contemplated change in Dr. Richardson's place at New Orleans, Mr. M. H. Lester, his former gardener will come North if a suitable situation offers. His lively contributions to the GARDENERS' MONTHLY indicate a rare lover of his profession, and we trust he will soon get an engagement suited to his tastes and his intelligence. As we understand, he has Dr. R's cordial good wishes in the change he contemplates.

DR. FRANKLIN B. HOUGH.—Science, especially botany and forestry, has lost an illustrious worker in Dr. Franklin B. Hough, who died at his residence in Lowville, New York, on the 9th of June, in his 63d year—he being born at Martinsburg in Lewis County, New York, on the 20th of July, 1822. He practiced medicine in Somerville from 1838 to 1842, and continued to cultivate his natural taste for literary, historical, and statistical work. In 1847 he published an account of the Flora of Lewis County, which was so well received by the botanists of that day, that he received his first scientific honors soon after by being elected a correspondent of the Academy of Natural Sciences of Philadelphia; which has been followed since by his election to some thirty-six other scientific or literary bodies. His statistical and historical labors, especially in connection with his own native State have been enormous.

Dr. Hough, as a member of the American Association for the Advancement of Science was a prime mover in the action of that body which did so much to make the modern phase of forestry a national question—and when in response to this movement the National Government undertook an investigation of the forestry question, Dr. Hough was placed in charge of the matter under the supervision of the Department of Agriculture. His reports in this connection are models of painstaking industry in the collection of facts. It was in just such work that his talent showed to advantage. It was always charming to engage him in conversation in connection with the history of any of our common studies. Anecdotes connected with men and things, with a ready recollection of dates and incidents, would be freely commucicated with an easy freshness truly remarkable.

During the winter he was engaged at Albany in drafting, and watching through its various stages, the Forestry bill which has since become the law of that State. He still contrived to work on other literary subjects that were quite enough for one man's time. It is believed this weakened his hitherto iron constitution, and brought on an attack of pneumonia about the beginning of April. After four weeks he seemed well enough to be removed to his home at Lowville, but only eventually to succumb.

MR. JOHN FEAST.—This eminent florist of Baltimore died in that city on the 7th of June, in his 85th year. The GARDENERS' MONTHLY has especial cause to offer a sincere tribute of regret for his loss, as he was its earliest friend in that city, and took an especial pride and interest in extending its circulation on its first appearance. He was one of those grand old florists who had a genuine love of their profession, as much for the desire of knowledge as for its regular commercial advantages. In those days when greenhouse plant culture was in the hey day of fashion, the Feasts were always in the advance in the introduction of rare kinds; and they were also among the most prominent in the raising of improvements among standard classes of plants. The Camellia and Azalea were at one time, just as popular as winter roses now are, and the Feasts made their mark, especially in the raising of new varieties of these. Up to the time when the Camellia lost its place as the leading favorite of fickle fashion, Camellia Feastii held its ground to the last. In other classes of plants they were among the leading improvers, and to this day Begonia Feastii is still popular and has not been equalled in its specific line of beauty by any newer introduction.

He was full of public spirit in connection with his favorite pursuit, and was the leading spirit in the formation of the Maryland Horticultural Society in 1830, which for a time had an immense influence on horticulture in the vicinity of Baltimore. In 1874 he was prominent in the re-vivification of the old body. Like so many of our leading florists and nurserymen, he was also called to take a leading part in his city's government. In 1869 he was elected to the first branch in the City Councils, and, as chairman of the Committee on Parks, had much influence in giving that city its present pre-eminence in beautiful public parks and gardens. Notwithstanding the regret we must all feel for the loss of so eminent and so good a member of our profession, it is a pleasure to feel that he filled the full measure of usefulness that can be expected of a human life.

CHARLES TURNER.—This distinguished florist died recently in England. He was well known in America. Few men did so much to improve florists' flowers as he did, and a large number of the best Dahlias, Carnations, Pelargoniums, &c., were raised by him. It was the great love of a whole lifetime with him. He started when fifteen years of age with a florist named Squibb, and because of his keen delight and success in business soon came to be partner in other famous concerns.

THE PERIODICAL CICADA.—By Prof. C. V. Riley. Issued by the Department of Agriculture. The best way to learn about anything is to study when the spirit of inquiry is excited. A timely paper has therefore a double value. Just now when we have passed through swarms of seventeen year Locusts, is the time to teach what is known about them, and the community is fortunate in having Prof. Riley for a teacher. It is needless to say that there is little left to know, after a lesson given by Prof. Riley.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

AMERICAN POMOLOGICAL SOCIETY.—The preparations in progress indicate that the meeting at Grand Rapids, Michigan, commencing September 9th, will be one of the most successful in the history of the Society. President Wilder has recovered from his recent severe attack of rheumatism, and will probably be present. Michigan has appropriated $1000 to make proper preparations to receive the body, and Messrs. Garfield, Lyon, and Beall are making great efforts to render every thing inviting to visitors. Over twenty topics of leading interest have already been selected for discussion, and arrangements will be made to give all a fair chance to come off as per programme.

Pres. Wilder will show how great has been the influence the thirty-seven years of work of the Society on American fruit knowledge and fruit culture—and that the usefulness of the Society is for all this only a beginning to what it will be capable of doing in the future. The discussions will probably be opened by Mr. W. C. Barry on new fruits, and will be followed by Mr. P. Barry on nomenclature, and Dr. Hexamer will tell what has been the past and probably will be the future of the strawberry. If anybody knows what influence immediately pollen has on fruits, he will be there to tell all about it in open meeting. A large attendance is expected from all quarters, Boston probably sending fifteen representatives. These we understand will urge the meeting in 1887 to be held there, in view of the fact that Col. Wilder will then formally lay down the Presidency to some younger man, in case he should be again re-elected in Grand Rapids, and still be with us—both of which is the hope of every lover of Pomology.

BOTANICAL CLUB OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—Horticulture derives so much aid from botanical science that whatever passes as botanical merely, has still an interest for the intelligent horticulturist. These will be glad to know that the Botanical Club, formed a few years ago in connection with the American Association, proved so great a success the last year, that its meeting again at Ann Arbor this season is looked forward to with a great deal of pleasure.

The majority of Western botanists will be in attendance, including Profs. Beal, Bessey, Burrill, Halsted, Bailey, Jr., Spalding, and many others. The botanical excursions will be to the Michigan "catholes," the pine region, and shore of the great lakes. There will be no lack of opportunity for the exercise of sociability. Many topics of direct interest to horticulturists will be discussed, especially those relating to diseases of plants. The American Association meets this year at Ann Arbor, Mich., from August 26th to September 1st.

JUDGES AT THE UNIVERSAL EXPOSITION AT ANVERS.—The Government of Belgium, under whose auspices the great international exhibition in Belgium is being held, kindly honored the Editor of the GARDENERS' MONTHLY with a position on the jury in the Department of Horticulture, but which his desire to remain home this summer compelled him to decline.

SCRAPS AND QUERIES.

PROSPECTS OF THE FORTHCOMING MEETING OF THE AMERICAN POMOLOGICAL SOCIETY.—Professor Beal writes: "The people of Michigan are making a good deal of stir about the American Pomological Society which is to hold a meeting at Grand Rapids, on the 9th, 10th, and 11th of September. Every week brings some news from other States, showing their interest in the greatest meeting of the kind ever promised in the West. There will be a hall 100 x 100 feet, devoted to exhibits. The evening addresses will be held in the best opera house. One of these addresses is on Injurious Insects, by Prof. A. I. Cook, the other on Parasitic Fungi, by Dr. C. E. Bessey, of Nebraska. There can be no danger of crowding at the hotels, the rates of which will be low. There will be an opportunity after the meeting, for members interested, to visit several fruit regions of Michigan as well as the Agricultural College. The topics for discussions are selected with great care and are such as cannot fail to interest wide-awake pomologists. An unusually long list of able persons have promised to take part in the proceedings. We expect to see you, Mr. Editor, and a large number from your city."

THE WORK OF THE AMERICAN ASSOCIATION OF FLORISTS.—Mrs. J. S. R. Thomson, Spartansburg, S. Carolina, says: "I am very anxious to be satisfied on several subjects, and woman-like, don't well know where to begin or where to leave off.

1st. I would like to know the drift and scope of the work of the approaching convention of American Florists in Cincinnati in August next.

2d. Are ladies to be admitted as members (by ladies I mean those that are in the business of buying and selling florist supplies), either active or honorary. I have had several circulars sent me, and notice one or two ladies enrolled. I sent in an inquiry as to my eligibility for membership, and have had no reply, and as I—and perhaps others—would like to understand the matter, we would be glad to have Prof. Meehan tell us all about it.

3d. I would like to know if they intend to take up the proper naming and classification of plants, as the Narcissus Association did in England, and made a standard for the correct placing of different sections. I was much enlighted by a catalogue from an Irish firm (kindly sent me by the Editor of GARDENERS' MONTHLY), by his accepting and using said rules, and thought how advantageous it would be to have American florists ruled in the same way.

I recently received from a very prominent firm 25 bulbs labelled Amaryllis formosisima, and felt deeply grieved that they were not the bulbs I had always known as A. formosisima, and think with Mr. Krelaage (in April GARDENERS' MONTHLY) that I must have had sent me Sprekelias glauca instead of those I desired. I admire the ones received, but want always to receive a bulb under its true name.

[So far as we know, women in business as florists, and there are a considerable number in the United States, stand before the Association on precisely the same footing as men. The suggestion in regard to nomenclature, and the classification of florists' flowers, is a very useful one, and will no doubt have due consideration from the Association. —Ed. G. M.]

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXVII. SEPTEMBER, 1885. NUMBER 321.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

We have become so habituated to rapid work that many good practices of the slow old times have become nearly forgotten. For instance, trenching ground for trees and flowers is so utterly neglected that few know even what trenching means. But trenching provides that the ground be loosened two feet deep. In such soils flowers or trees rarely suffer, though they have to go through a drouth that would tax the memory of the oldest inhabitant to remember the like. A few, however, stick to the good old rules for deep digging, though at some risk of being laughed at. The longest memory knew nothing equal to the severe drouth in this part of the world last summer. Numbers of shrubberies had the plants destroyed. Few things suffer more in these exigencies than Rhododendrons and similar plants with hair-like roots, that do not run far below the surface. But we know a friend in love with the old fashioned practice, who has his Rhododendron bed dug two feet deep, and has the earth mixed with nearly one-half its bulk with brush wood and rubbish, and although this admixture necessarily raised the finished bed far above the surrounding soil so that much water would run off, the plants are in glorious condition to-day in spite of the long drouth, though not a drop of artificial watering was bestowed on them. There is no doubt that very much of ill success in growing flowers, shrubs and trees, comes from carelessness in preparing deep and rich soil. This is particularly the case with herbaceous plants and bulbs. If one would have these satisfactory, a cool, deep, and rich soil is indispensable, and we have especially in our mind Lilies and other bulbs that are usually set out at this season of the year. Of the Lily especially, we may say that it is but a waste of time, money, and good temper to plant them in ground that dries out easily in summer time.

We would again call the attention of those having places of limited extent to the great number of beautiful shrubs that have been introduced of late years, and the opportunity they give for a great variety of beauty in a small place. In some classes of plants, particularly, so much variety has been introduced that we might make a collection of one kind of plant alone, and still have a charming feature. There are, for instance, Lilacs in great variety, and of the Japanese Maples, scores that afford an immense variety in the color and form of the leaves, as well as in habit and general character. The catalogues of Ellwanger & Barry; Parsons Sons & Co.; Saul, and others, give full descriptions of these; and the catalogues of any of the larger firms will well repay a careful consultation for novelties before deciding what to plant. We annex a cut of the larger blood-leaved Japan Maple, which

goes in foreign catalogues, where they love long Latin names to garden varieties better than we do, as Acer Japonicum polymorphum atropurpureum, or sometimes atrosanguineum; for we believe there

Acer polymorphum atropurpureum.

is no material difference between the two. There are other blood-leaved kinds, with cut and other forms of leaves; but this, the larger leaved, is one of the showiest of the whole. Though Maples, they are all shrubs of moderate growth, and not trees.

One of the regretful features of gardening is to feel that the beautiful Geraniums, Coleus and other plants that have given us so much pleasure and enjoyment the whole summer, must be left in the open ground for the frost to kill. But it is seldom worth while trying to save any, unless we desire a a few large plants for some special purpose, as young ones do so much better every way. September is the great propagating month for young bedding plants.

The best way to propagate all the common kinds of bedding plants is, to take a frame or hand-glass and set it on a bed of very sandy soil made in a shady place in the open air. The sand should be fine and sharp. and there is, perhaps, nothing better than river sand for this purpose. The glass may be whitewashed on the inside, so as to afford additional security against injury from the sun's rays. Into this bed of sand, cuttings of half ripened wood for the desirable plants may be set, and after putting in, slightly watered. Even very rare plants often do better this way than when under treatment in a regular propagating house. In making cuttings, it is best to cut the shoots just under a bud,—they root better, and are not so likely to rot off and decay. A cutting of about three eyes is long enough for most strong growing things, such as Geraniums, Fuchsias, &c.

Small growing things, of course, will take more buds to the one cutting. From one to three inches is, however, long enough for most cuttings. They should be inserted about one-third of their way under the sand, which latter should be pressed firmly against the row of cuttings with a flat piece of board,—not, however, hard enough to force the particles of sand into the young and tender bark, which is often the first step to decay. For a few cuttings, they may be inserted with a dibble; but where many are to be put in, it saves time to mark a line on the sand with rule or straight edge, and then cut down a face into the sand, say one or two inches deep, when the cuttings can be set against the face like box edging. All amateurs should practice the art of propagating plants. There is nothing connected with gardening more interesting.

COMMUNICATIONS.

NOTE ON AZALEA MOLLIS, AND RHODODENDRONS.

BY JOSEPH PERKINS.

In a recent MONTHLY I noticed the Azalea mollis referred to as not hardy. I have a bed of this Azalea containing a dozen plants which have proved for some half dozen years as hardy as any shrub on my lawn. After our very unusually destructive winter there was not a bud, flower or leaf, on this entire bed that appeared injured by the winter. The entire bed was wonderfully beautiful and attracted great attention from all intelligent visitors. The flowers are larger and the colors more delicate than any other hardy Azalea I have seen. The plants were obtained from Mr. Parsons, Flushing, and they have never been the least injured by the winter.

I have a bed of Rhododendrons of all colors, some fifty feet by fifteen, set some eight or ten years, which have made a very vigorous growth and are annually covered with their magnificent flowers.

Also a bed of Kalmias (angustifolia) nearly as large, (three varieties,) which seem as much at home as on their native mountain side.

What gives these beds, to us, especial value and interest is the fact that, in the smoke of our manufacturing city none of the terebinthine evergreens

can be grown. And these two, with the Mahonia, are, in our experience, the only entirely hardy evergreens which will thrive in our city smoke. The special thriftiness of our Rhododendron and Kalmia beds we attribute to the abundant use of rotten wood as a mulch. It is astonishing how soon a mulching of 3 or 4 inches of rotten wood will be filled with the small white fibrous roots of these shrubs, and give them vigorous growth. In our experience, trees and shrubs are often found to be "not hardy" from being planted in exposed situations when not in a thoroughly vigorous condition. Our habit for quite a number of years has been to plant all shrubbery, which has been transported, in a part of the garden which is well cultivated and where attention can be conveniently given them. Here they will prosper, while on the lawn a majority would either summer die or be winter killed. After say two years of vigorous growth in the garden, they can, on a damp day in spring, be moved to the lawn and seemingly not know of the change. *Cleveland, Ohio.*

[We should look on Azalea mollis of equal hardiness with any species of Azalea. The remarks of our correspondent on hardiness in general are very much to the point. Hardiness is dependent on many things besides frost. Two plants of the same variety, side by side, will often have one taken and the other left during a severe winter. Very much depends on constitution, and constitution often depends on food. A well-fed plant will get through a hard winter, when a starved one easily succumbs.

The note on Rhododendron culture is particularly valuable. All experience shows rotten wood as particularly suited to this tribe.—Ed. G. M.]

DESTRUCTION OF TREES BY COAL GAS.

BY H. F. HILLENMEYER.

The death of trees in cities is frequent and the stereotyped diagnosis is "gas." That gas will destroy trees I doubt not. Illuminating gas is of less specific gravity than air, and if escaping under ground should rise through it. It is not absorbed by water and should not thus be retained in the soil to the material detriment of the trees. Escaping gas in the presence of the entire root-system of a tree would likely kill it, but the destruction of part of the roots, or the application of destructive agents to a part only of the roots of a tree would not in my observation do further harm than check the growth in proportion to the injury sustained.

I have seen many trees perish in the city and have often wondered that tree-life was at all possible. With an impervious stone covering, with no possibility to cultivate or aerate the soil, and with the continuous application of waste slops containing all manner of injurious substances, it is, indeed, wonderful that plant-life is at all possible.

In Lexington I also notice the loss of which your Louisville correspondent complains. But the cause of the injury is not due to gas. The streets have recently been supplied with water mains and the trees on the sidewalks have been severely root-pruned. The weather in Kentucky has recently been extremely hot, and at Louisville very dry. Here we had abundant rain-falls—nearly 11¾ inches during June and July—but before the window at which I write stands a vigorous young sugar maple that on the morning of July 21st was the picture of robust life, and in the evening the leaves on the southwest side might have been used for kindling. The soil was moist and covered with luxurious sod, but with the thermometer on a shaded north portico at 99°, the tree yielded to the open heat of the sun, intensified by reflection and radiation from the contiguous building.

It is this latter condition that destroys trees in cities. The soil rarely dries, but the pent heat, intensified by radiation and reflection, removes moisture faster than the roots can supply it. I notice many trees in Lexington assuming a yellow unhealthy hue, but it is due to root-pruning and to heat, intensified by the surroundings. Some will perish, but the lengthening nights and diminishing heat will mitigate the injury. *Lexington, Ky.*

[Coal gas, as our correspondent well remarks, is lighter than the atmosphere, and must be pushed up out of the ground when air or water forces its way in; and yet, if he has dug up trees killed by coal gas, as they certainly are, he will find the newly turned up earth so nauseous with the stench that he would certaintly be convinced that something has been retained, though the mere "gas" has escaped.

The conditions referred to by our correspondent undoubtedly injure and kill trees sometimes; and yet there can be no more reason to doubt that gas kills trees also, in the mind of anyone who has lived in Philadelphia a few years, than that lightning also sometimes kills them. If it were desirable we could give in detail evidence that would satisfy anyone. This evidence is not merely of the "popular kind" that "knows such and such is the case because it is," but the facts have been carefully gone over by scientific experts. We need

only name here a paper by B. A. Fahnestock, one of Philadelphia's leading chemists, who, a quarter of a century ago, published in the Proceedings of the Academy of Natural Sciences of Philadelphia, with elaborate details of his experiences.—Ed. G. M.]

THE UMBRELLA CHINA TREE.

BY G. W. KNOX.

In the June number of the GARDENERS' MONTHLY, page 164, I notice a communication from Mrs. J. S. R. Thomson which mentions that "there is one variety of the China called in ignorance Umbrella Tree." Now the Umbrella China is a separate and distinct variety of the China tree family (Melia Azedarach umbraculifera); it assumes the exact shape of an umbrella, in its natural growth, and does not need the aid of the pruning knife.

The first Umbrella China known in the United States was found growing on Galveston Island, Texas, where once stood the village of Campeachy, which was from 1817 to 1821, the rendezvous of that celebrated buccaneer, Laffitte, who roamed the seas in search of booty, and it is supposed that the seed of the Umbrella China was brought to Galveston Island, by his vessels, from some island or country in the tropics.

It is a tropical tree without a doubt. I know of several experiments with it in Missouri and Illinois, where it will not live through one winter,—the sap freezes and bursts the tree,—and I know of no case where the tree is growing in very cold climates although we have sent quite a number north.

From the tree on Galveston Island the seeds were taken to Harrisburg and Lynchburg, Texas, where they were grown for sale and from there sent out to all parts of Texas.

I have been growing the tree for sale for the last eight years—make a specialty of it—consequently have watched the habits very closely and every year I learn something new of it.

In getting seed to plant, one has to be careful not to select the seed of an Umbrella that is growing in close proximity to a common variety, for if he does his labor will be in vain, for nine out of ten of the trees you will raise from those seeds will be common, scraggy Chinas; we have proved it repeatedly, consequently know it to be a fact; we have our seed-bearing trees growing in the center of our nurseries, so as to insure against cross-fertilization from common Chinas growing on neighboring property.

All of the parks in our Alamo city are planted in Umbrella Chinas, also the beautiful grounds in and about the U. S. Depot of Texas, here; and of late years they have been planting the parks in many of the cities of Mexico with it.

There is no tree of the fine species that will withstand the excessive heat and long drouths of Texas and Mexico, as well as the Umbrella China.

Although it is called the "Pride of India" it is no less the pride of the Lone Star State and our Alamo City in particular. *San Antonio, Texas.*

[Mrs. Thomson suggested that "Umbrella tree" was improper, because that name has been already pre-empted for Magnolia tripetela, which is the "Umbrella tree." But if the word "China" be added, there will be no confusion.

It should not be "Umbrella tree," but "Umbrella China tree," as Mr. Knox puts it.—Ed. G. M.]

SCRAPS AND QUERIES.

MAGNOLIA CORDATA.—We had reason for believing that the true Magnolia cordata had been confused with forms of Magnolia acuminata, and that the genuine which is rare even in its native places, did not exist in nurseries, though there is a tree in the Botanic Garden at Cambridge, Mass., and the one on record as being in the Woodlands near Philadelphia, is probably correct. But Mr. S. B. Parsons, of Flushing, sends us a specimen which indicates that they have it correctly identified. It is, however, certainly very rare.

LAWN GRASS.—"Meadow," West Philadelphia, Pa., desires us to tell her "through the MONTHLY the best grass for a lawn." The best kind depends on many circumstances. If rather low ground and somewhat stiff soil the different species of Agrostis known as Fiorin, Red Top, Bent, and other common names are very good. Rye grass is excellent for limestone soils, though liable to be killed in very severe winters. Under the shade of trees the flat-stemmed blue grass, Poa compressa, is very good, and in rather rolling ground the sheepsfesque, Festuca ovina, is excellent. For general purposes there is nothing to equal Kentucky Blue grass. Avoid white clover and the ordinary mixtures, if you would have a perfect lawn.

If sown in the fall it may be well to sow Rye with it, provided the Rye be mown early in spring, and kept mown as if it were grass. The only object of sowing Rye is to keep the young and very small grass plants from being drawn out by the frost. The heavy leaves of the Rye fall down over the grass plants and keep them pressed firmly in the soft earth when the thaw comes. Coarse weeds must be drawn out by hand next summer.

A WHITE-LEAVED HONEY LOCUST.—"J. G.," Tipton, Mo., sends a white-leaved Honey Locust. He saw the small plant first in 1884, and it is now 34 inches high, and still retains its variegation. He would like to know whether it is likely to be a good novelty, and how to propagate it?

Just how much value there may be to a variegation, no one can decide till they see a tree or plant of some size. Nothing, for instance, is more beautiful than the white variegation of the Box Elder, as grown in Europe; but in America the white burns out, and no one cares for it. Then much depends on the exact shade of the variegation, and the form of the leaf that is variegated. In short it depends on whether the tree will keep healthy under the variegation, and whether it is likely to "strike" the beholder. If it is a "striking" novelty, it would be valuable. The texture of the leaves sent seems strong, and probably it would stand the sun better than the Negundo. The correspondent may persevere with his care of it, with some hope that it may prove worthy of general attention. It ought to graft very easily on seedlings of the common Honey Locust. Nurserymen have no difficulty in grafting the weeping and other varieties on this stock.

TREES FOR PUBLIC SQUARES.—Boys will be boys, and remembering this fact a correspondent makes the good suggestion that trees for public squares or streets in a large city should not be kinds that by fruits or flowers offer temptations too great to be resisted in fruit or flower.

WEARING OUT OF THE SUSPENSION HOLES IN ZINC LABELS.—Mr. Joseph Perkins, Cleveland, Ohio, remarks: "A correspondent recently observed that he was troubled with the wearing of the eyelets in zinc labels. We obviate that vexatious result by having two holes (say three-fourths to an inch apart) punched in the label, and by running the wire through the two holes, and with a good twist all wearing is prevented."

GRASS FOR A LAWN.—A correspondent at Staunton, Virginia asks: "What is the best lawn treatment? Is there anything better than Agrostis stolonifera to mix with our common Blue Grass for a lawn?"

[There is no benefit in any lawn mixture. If you sow a dozen kinds together, in a few years there will be only one kind left, because the one that is best suited to the soil will crowd out all the rest. If the soil is damp, stiff, or clayey, sow the Agrostis; but as we remember the soil of Staunton generally, we should incline to sow Blue Grass pure and unadulterated.—Ed. G. M.]

HARDY CACTI.—Mr. Bassett, Hammonton, N. J., asks: "Is there any cactus with brilliant red flowers, sufficiently hardy to stand our winters?"

"Opuntia Rafinesqui blooms freely here in any sandy waste, and I would like to find some red variety to grow along with it. Would it be possible to produce a hybrid between O. Rafinesqui and some of the red ones?"

[Echinocactus phœniceus, a deep crimson, is probably hardy in New Jersey, and E. Simpsoni with Mamillaria vivipara, both from the Rocky Mountains, and quite hardy, are "red" ones also. There is a variety of O. Rafinesqui, named by Dr. Engelman, O. Rafinesqui oplocarpa, with flowers of light straw, but shading to orange red at the base, from which a very dark Opuntia Rafinesqui might perhaps be obtained by selection, and perhaps by hybridization as suggested by our correspondent. —Ed. G. M.]

DAHLIA STEM BORER.—E. S. Miller, Wading River, L. I., N. Y., says: "I was surprised that you never heard of the Dahlia stem borer. Twenty years ago it used to trouble me. It would bore out the stem when from six inches to a foot high. Of course the stem died, when the buds from below the borer's track would grow, making a much shorter season of bloom. I have not seen it late years, though I grow usually ½ to 1 acre of Dahlias."

And W. A. Manda, Botanic Gardens, Cambridge, Mass., adds the following: "The Dahlia stem borer you mention in your last MONTHLY, came to my notice in my early apprenticeship in Bohemia, and then again in Vienna, Austria, where it was even more destructive than in the former place. I have not seen anything of this enemy in this country yet, though we have something over five hundred Single Dahlias planted out this summer, some of which are really beautiful. In my native language we call this borer 'Skvor,' what would be the 'Earwig' in English.

"The best way to destroy this pest is to take a small flower pot, fill it with dry paper loosely about one-third of the pot, and then suspend inverted among the plants. They soon find this out as a good dry hiding place, and are easily caught by inspecting the pots early in the morning."

DESTROYING CHICORY AND SIMILAR WEEDS.—We give the inclosed here in order to repeat advice to a New York correspondent that may be useful to others elsewhere: "Can you give me any advice as to how to destroy or get rid of chicory when it gets possession of a lawn? I am asked the question by a lady who has tried every means to extirpate the plant. She has dosed it with salt, and she has pulled it up by the root; but it will grow again in greater quantity from the portion of the root that breaks off."

[No plant can live long, no matter if it is as persistent as the Poison Vine, if we prevent it from making new leaves. As soon as the young and tender leaves appear, cut the whole plant off just under the ground. A second crop may possibly appear, when cut them again. We have known a feeble attempt to make a third crop of leaves, when another cutting ends the effort. If the leaves are permitted to get mature, food will be sent down into the roots which can then successfully resist the cutting out. It is essential to cut while the leaves are very young. Any tough weed can easily be destroyed in this way.—Ed. G. M.]

IMPROVED HEPATICAS.—Mr. W. F. Bassett, Hammonton, N. J., says: "Years ago, in my boyhood, when roaming over the fields and in the forests of 'the Old Bay State' in search of nature's floral treasures, I found several Hepaticas of remarkable beauty and semi-double. One of these was deep velvety blue, and one deep pink. I removed them to the garden and kept them for several years, and if I could now get hold of varieties as fine, would prize them higher than many of the high priced novelties."

[In gardens in Europe there are varieties of double and single and of many shades of colors; and possibly these are already in some American gardens where hardy herbaceous plants are appreciated.—Ed. G. M.]

TREATMENT OF RHODODENDRONS.—A Virginia subscriber asks: "How shall some Rhododendrons, transplanted last fall and not protected from the winter and spring winds, be treated? They survived, but that is all. Very little growth this summer—vitality much weakened. Am now giving them liquid stable manure bi-weekly."

[We have never known liquid manure to be applied to Rhododendrons, nor indeed manure of any kind except that which may be in the form of dead wood or leaf mould in which they certainly delight. They require a soft, spongy soil in which the delicate hair-like roots may get air and moisture, and be preserved from hot sun. The foliage does not mind heat, so that the roots are kept cool in a well aerated soil. In the winter protect them from dry winds by throwing some branches over the plants till they are fully recovered.—Ed. G. M.]

HALL'S JAPAN HONEYSUCKLE.—"E. S. W.," Berlin, Mass.: The plant sent is Lonicera Japonica. It is known in nurseries as L. Halliana, because it was introduced to America by Dr. Hall. What is commonly known as Japan Honeysuckle appears to be Lonicera brachypoda. This has shining evergreen leaves, and is a great creeper over the ground.

INJURY BY THE SEVENTEEN-YEAR LOCUST.—Some very intelligent people write what to do with the larvæ of the seventeen-year locust, which the entomologists tell them "must do" immense injury by feeding on the roots of fruit trees for seventeen long years. We have no evidence that they really do any injury by feeding on the roots, though theoretically, as the entomologist argues, they ought to do. A quarter of a century ago, Miss Margaretta Morris, distinguished for her knowledge of insect life, published a paper that attracted considerable attention at the time, contending that the well-known disease in the Butter Pear, was caused by the larvæ of the Cicada preying on the roots. She hired a man to dig round a large tree of this variety, and collect and count the enormous number picked out from the earth around. There were other varieties of Pear on her ground as healthy as Pear trees could be, bearing perfect fruit after their kind, which she did not dig around and examine, but which the event showed had as many larvæ preying on their roots as on the Butter, and one can scarcely believe they would produce disease on the one and not on the other. This thought was suggested to her, but she would insist that that only showed that some varieties had the power of resisting Cicadian influences more than others. To her death she fully believed she had discovered the cause of the cracking of the Butter Pear.

The fact is, that there are hundreds of old Pear trees in this vicinity, which during the century or more of their existence must have sustained many generations of Cicada larvæ, that are just as healthy as pear trees can be.

We might answer the question, How is it possible that a tree can have thousands of insects preying on its roots without injury? by the childish reply, "Because it is." We know there is no injury, and the fact ought to be enough. Possibly the explanation may be found in the fact that all trees have thousands of roots for which they have but a temporary use. Thousands of roots die annually under every large tree. It may be that it is no disadvantage to a tree to lose by these insects what they lose anyway; but whether this or any other explanation be the true one or not, the fact remains that no fruit or tree grower has ever had any actual evidence that the larvæ of the seventeen-year locust ever did a tree injury.

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Flowers in winter, is now a great aim, and it has got to be in a measure anything so that it be flowers. The great variety of beauty which flowers afford is seldom thought of, and if we have Roses, Bouvardias, Carnations, Heliotropes, and, if one desires to be a little more aristocratic, a few Orchids, it is about the extent of our demands. Still, these are sweet and pretty, and the small list is perhaps due to the cheapening process which will give us a whole houseful of one thing for much less figures than we can grow a great variety in one house. A great mixture demands great skill, but a house of one kind is so easily mastered in its details that any smart boy can soon be taught to successfully manage it. But even in these simple processes experience is a great help. As noted, any smart boy can soon be taught to grow Roses, but there is a very great art in knowing how to grow winter Roses well, and it is those who succeed in growing these winter flowers to the greatest perfection that make the most money if they are commercial florists, or get the most pleasure if they be chiefly amateurs whose profit is in the pleasure that gardening affords.

In offering hints for successfully growing winter flowers, a difficulty arises from the varying circumstances and situations of each grower. It is impossible to give detailed descriptions of houses, or of practice suited to each, but there are general principles that are everywhere recognized by experienced flower culturists, and these must serve for "Seasonable Hints."

For one, we can remember that the brighter and more direct the sunlight the more flower. Hence it is a good thing to have the slope of the glass as nearly at a right angle with the sun's rays as possible. And we want all the light we can get, sunlight direct, or reflected light if no other.

Air or ventilation is not regarded as of so much consequence as it was once thought to be, and houses with full flowers all winter are often kept with sashes all closed. Fresh air for all growing purposes seems to find its way in through chinks and crevices. Still we fancy good growers will yet arrange for an abundance of fresh air if they can get it warm enough. Roots like fresh air, and this is one effect of watering. The bad, exhausted air is driven out every time water is poured into the soil, and when the water goes out fresh air follows. Hence a soil that dries rapidly—that wants water often, is much better than one that needs little moisture. And so we like soil rather shallow in the benches or pots, and well drained. On the other hand, soil that is often watered, soon becomes poor. The rich material is washed out; so that, to have fine flowers, guano or other concentrated manure may be frequently applied to the surface.

In mixed houses, where so much enjoyment is to be reached, much the same hints may be given in a general way. But there are more matters of detail requiring attention. In taking up things from the ground for potting, care should be taken to have the pots well drained, with pieces of potsherds over the hole. The more rapidly water passes through the soil the better plants will grow. Pots could be made without holes, and the water would all go through the porous sides in time; but that is too slow a way, so we make a hole to admit of its more rapid escape, and we place the broken pots over the hole to make a vacuum, which assists the objects of the hole. In very small pots, or with plants which have strong enough roots to rapidly absorb all the moisture

they get, and speedily ask for more, "crocking" is not necessary.

There is quite an art in lifting plants from the open ground into pots, if they are to go on and bloom all the winter time. It will not do to let the leaves wilt much, or they will not get up again. They have to be taken with reasonable ball, put into the smallest possible pot, well watered at once, and placed temporarily where the drying air will not draw the moisture from the leaves. The florist who has to lift Bouvardias or Chrysanthemums from the open ground to benches in the greenhouse, so as to have them in flower all winter, keeps the greenhouse closed, for a few days, so that the moisture cannot get out. He syringes, to add to the atmospheric moisture, and even shades the glass, for it is now known that light is as great an evaporator of water as heat itself. One with a few plants need not go to all this trouble, but can apply the lesson from the larger scale to the smaller one.

Bulbs for flowering in pots should be placed at once. Four or five-inch pots are suitable. One Hyacinth and about three Tulips are sufficient for each. After potting, plunge the pots over their rims in sand under the greenhouse stage, letting them remain there until the pots have become well filled with roots, before bringing them on to the shelves to force.

All that we have so far written has been with the view of getting plenty of flowers with an abundance of light. But in room gardening light cannot always be had, and fortunately there are plants like Begonias, Oxalis, Tradescantias or Spiderworts, that flower with little sun, and then there are numerous shade-loving plants with leaves as pretty as any flowers.

COMMUNICATIONS.

CACTUSES.

BY A. BLANC.

It is astonishing what an interest the New Orleans Exhibition has awakened in Cacti.

True enough, they only need to be seen to be admired, and yet the majority of florists cannot bear them—perhaps, because there is no money in them.

I have a collection of about 400 varieties, mostly small plants, but good bloomers; and even when not in bloom they are always interesting to me. To watch the plants grow, develop their many colored spines, form their buds, expand their beautiful flowers and bring forth their brilliant seed-pods, is to me just as fascinating as to look over a collection of valuable paintings.

When I say florists can't bear them I must except our friend Mr. John Thorpe, who in answer to that imputation writes me as follows: "You are mistaken when you say I hate Cacti; I love them, but in this greed to live there is no opportunity to make Cacti what they will be in twenty-five years. When I tell you that two of my most intimate friends are Pfersdorff of Paris, a man that has actually slept with a Turcshead for his pillow, and Mr. Peacock, of Hammersmith, London, who has had Cereus cylindricus for a bed-fellow, you will not say your friend John Thorpe hates Cacti."

Mr. Thorpe, by the way, has probably the finest Pilocereus senilis in this country. It stands forty-six inches high.

Although for some years I have been supplying

Astrophytum myriostigma.

leading European houses with rare Cacti, yet I found it almost impossible to get anything like a complete collection for my private use. So at last I have concluded to send to Europe for specimens of every variety catalogued there, which amounts to nearly nine hundred. It is probably about the best way to get them correctly named, which is a very important item. I have had much trouble in this respect, with some thirty correspondents in Mexico and out West. Ask them for Echinocactus Sileri, Astrophytum myriostigma, or the Red Night-blooming Cereus, and they answer: "Oh, yes, we have them." When at last you pay ten dollars expressage on a box of samples, you get some Opuntias or a Cereus Peruvianus.

Many Cacti may well be grown for their beauty of form and spines; for instance, Echinocactus Sileri, Whipplei, viridescens, etc. I think one of the handsomest is E. Ottonis; the flower also is splendid although not fragrant.

Cereus, are my favorites, especially the night-bloomers. I have a C. nycticaulis, raised from a three-inch cutting three years ago, that to this date (July 6th) has opened sixteen flowers this season and has yet twenty-one buds to open. Until this year I kept it growing to one stem, in a 6-inch pot and trained it along the roof of my small greenhouse, where it received plenty of sunlight during winter. It made a growth of fifteen feet in two seasons. I have about ten other varieties of night-bloomers, but I find but little variation in the flowers, except as to size and perfume. The true red bloomer, Cereus Schmidti, has not bloomed for me yet, neither has the variety sent to me from Mexico as a red night-bloomer; (three Mexicans swear to it) and of which I do not know the name.

The Astrophytum myriostigma, called in Europe "Bonnet d'evêque," (Bishop's hood) is a very interesting Cactus, being, I believe, the only one without spines. I don't see how Aloe longiaristata could ever have been mistaken for it.

Philadelphia.

CULTURE OF THE CACTI.

BY N. ROBERTSON.

I am glad that my brief article has brought out Mr. Siler's remarks, for they are such as all growers may benefit by. The instances he gives are in accord with my ideas, only in so far as their ability to endure cold is concerned. What I said was not to show what amount of cold they could stand; 45° was only intended as a general storage temperature. Some of the species might be benefited by a lower and perhaps a higher; but I have always been very successful at this and mine is a very mixed collection. If we get to a lower temperature than what I have mentioned the air is sure to become so pregnant with moisture during our long winter months as to be injurious. We dare not ventilate from the outside during winter, and the sun's rays have very little power. Mr. Siler has mistaken the intention of my article, for I had no idea of giving how much cold they would stand. He says, "I do not know how cold it is in Canada at 45°, but here in Utah," enumerating different species that will stand out in their native places, and do well with frost 22° below zero. Some of those I have tried with our winters and although I have in some cases resorted to covering, protecting in the dryest manner, when spring came I invariably found them a rotten mass. But I must remark that our temperature falls frequently below those he gives. Yet, I find they suffer from a very few degrees of frost. The reason why, I am not prepared to say. It would be a good thing if they could be left out permanently, for they are not the most agreeable things to handle of the vegetable kingdom.

As to his finding a number of Agave Utahense and Mamillaria vivipara, standing in water and in health, this will be a new thing to most growers of them. Surely Mr. Siler does not infer that this is the better mode of treatment; if he does, why then give us the natural state in which they are found in the greatest perfection? He says (enumerating several species) that they grow on the well-drained hillsides, and on the sandstone ledges, in many instances with hardly enough to cover the roots. Other two are found exposed to the fierce heat of the summer's sun "where hardly a lizzard is to be found," and that this agave is found on the same ledge is enough to prove the treatment they will enjoy most.

His remarks on the soil they are found in will be most interesting to all parties interested in the Cacti culture, for I know that much diversity of opinion exists on this. Mine may not be the best one, but it has proved to me the best alternative I have yet found. It must also be remembered that no amount of water in the positions in which they are found can lodge in such a way as to stagnate, and hurt them. When planted out under the same conditions I say, pour away as much water as you like when they are growing, and you will benefit them; but at rest, if you want flowers the next season, it will be better to refrain from it. This partial drying process has always given me good results whilst the other has proved the contrary.

I quite agree with the Editor's remarks, that under culture we cannot always rely on imitating natural conditions. We must learn from experience. I say, yes, and often improve upon it, for it is a most difficult task to get close to nature and take in all surroundings and all other things adapted to positions chosen.

But an understanding of the natural laws and substances that control the production of such plants must always prove beneficial and conducive to their proper treatment; and I am sure that Mr. Siler's remarks on this subject will be much appreciated by all lovers of this class of plants; a class that deserves more attention than there has been given, for they always make a

only name here a paper by B. A. Fahnestock, one of Philadelphia's leading chemists, who, a quarter of a century ago, published in the Proceedings of the Academy of Natural Sciences of Philadelphia, with elaborate details of his experiences.—Ed. G. M.]

THE UMBRELLA CHINA TREE.

BY G. W. KNOX.

In the June number of the GARDENERS' MONTHLY, page 164, I notice a communication from Mrs. J. S. R. Thomson which mentions that "there is one variety of the China called in ignorance Umbrella Tree." Now the Umbrella China is a separate and distinct variety of the China tree family (Melia Azedarach umbraculifera); it assumes the exact shape of an umbrella, in its natural growth, and does not need the aid of the pruning knife.

The first Umbrella China known in the United States was found growing on Galveston Island, Texas, where once stood the village of Campeachy, which was from 1817 to 1821, the rendezvous of that celebrated buccaneer, Laffitte, who roamed the seas in search of booty, and it is supposed that the seed of the Umbrella China was brought to Galveston Island, by his vessels, from some island or country in the tropics.

It is a tropical tree without a doubt. I know of several experiments with it in Missouri and Illinois, where it will not live through one winter,—the sap freezes and bursts the tree,—and I know of no case where the tree is growing in very cold climates although we have sent quite a number north.

From the tree on Galveston Island the seeds were taken to Harrisburg and Lynchburg, Texas, where they were grown for sale and from there sent out to all parts of Texas.

I have been growing the tree for sale for the last eight years—make a specialty of it—consequently have watched the habits very closely and every year I learn something new of it.

In getting seed to plant, one has to be careful not to select the seed of an Umbrella that is growing in close proximity to a common variety, for if he does his labor will be in vain, for nine out of ten of the trees you will raise from those seeds will be common, scraggy Chinas; we have proved it repeatedly, consequently know it to be a fact; we have our seed-bearing trees growing in the center of our nurseries, so as to insure against cross-fertilization from common Chinas growing on neighboring property.

All of the parks in our Alamo city are planted in Umbrella Chinas, also the beautiful grounds in and about the U. S. Depot of Texas, here; and of late years they have been planting the parks in many of the cities of Mexico with it.

There is no tree of the fine species that will withstand the excessive heat and long drouths of Texas and Mexico, as well as the Umbrella China.

Although it is called the "Pride of India" it is no less the pride of the Lone Star State and our Alamo City in particular. *San Antonio, Texas.*

[Mrs. Thomson suggested that "Umbrella tree" was improper, because that name has been already pre-empted for Magnolia tripetela, which is the "Umbrella tree." But if the word "China" be added, there will be no confusion.

It should not be "Umbrella tree," but "Umbrella China tree," as Mr. Knox puts it.—Ed. G. M.]

SCRAPS AND QUERIES.

MAGNOLIA CORDATA.—We had reason for believing that the true Magnolia cordata had been confused with forms of Magnolia acuminata, and that the genuine which is rare even in its native places, did not exist in nurseries, though there is a tree in the Botanic Garden at Cambridge, Mass., and the one on record as being in the Woodlands near Philadelphia, is probably correct. But Mr. S. B. Parsons, of Flushing, sends us a specimen which indicates that they have it correctly identified. It is, however, certainly very rare.

LAWN GRASS.—"Meadow," West Philadelphia, Pa., desires us to tell her "through the MONTHLY the best grass for a lawn." The best kind depends on many circumstances. If rather low ground and somewhat stiff soil the different species of Agrostis known as Fiorin, Red Top, Bent, and other common names are very good. Rye grass is excellent for limestone soils, though liable to be killed in very severe winters. Under the shade of trees the flat-stemmed blue grass, Poa compressa, is very good, and in rather rolling ground the sheepsfesque, Festuca ovina, is excellent. For general purposes there is nothing to equal Kentucky Blue grass. Avoid white clover and the ordinary mixtures, if you would have a perfect lawn.

If sown in the fall it may be well to sow Rye with it, provided the Rye be mown early in spring, and kept mown as if it were grass. The only object of sowing Rye is to keep the young and very small grass plants from being drawn out by the frost. The heavy leaves of the Rye fall down over the grass plants and keep them pressed firmly in the soft earth when the thaw comes. Coarse weeds must be drawn out by hand next summer.

A WHITE-LEAVED HONEY LOCUST.—"J. G.," Tipton, Mo., sends a white-leaved Honey Locust. He saw the small plant first in 1884, and it is now 34 inches high, and still retains its variegation. He would like to know whether it is likely to be a good novelty, and how to propagate it?

Just how much value there may be to a variegation, no one can decide till they see a tree or plant of some size. Nothing, for instance, is more beautiful than the white variegation of the Box Elder, as grown in Europe; but in America the white burns out, and no one cares for it. Then much depends on the exact shade of the variegation, and the form of the leaf that is variegated. In short it depends on whether the tree will keep healthy under the variegation, and whether it is likely to "strike" the beholder. If it is a "striking" novelty, it would be valuable. The texture of the leaves sent seems strong, and probably it would stand the sun better than the Negundo. The correspondent may persevere with his care of it, with some hope that it may prove worthy of general attention. It ought to graft very easily on seedlings of the common Honey Locust. Nurserymen have no difficulty in grafting the weeping and other varieties on this stock.

TREES FOR PUBLIC SQUARES.—Boys will be boys, and remembering this fact a correspondent makes the good suggestion that trees for public squares or streets in a large city should not be kinds that by fruits or flowers offer temptations too great to be resisted in fruit or flower.

WEARING OUT OF THE SUSPENSION HOLES IN ZINC LABELS.—Mr. Joseph Perkins, Cleveland, Ohio, remarks: "A correspondent recently observed that he was troubled with the wearing of the eyelets in zinc labels. We obviate that vexatious result by having two holes (say three-fourths to an inch apart) punched in the label, and by running the wire through the two holes, and with a good twist all wearing is prevented."

GRASS FOR A LAWN.—A correspondent at Staunton, Virginia asks: "What is the best lawn treatment? Is there anything better than Agrostis stolonifera to mix with our common Blue Grass for a lawn?"

[There is no benefit in any lawn mixture. If you sow a dozen kinds together, in a few years there will be only one kind left, because the one that is best suited to the soil will crowd out all the rest. If the soil is damp, stiff, or clayey, sow the Agrostis; but as we remember the soil of Staunton generally, we should incline to sow Blue Grass pure and unadulterated.—Ed. G. M.]

HARDY CACTI.—Mr. Bassett, Hammonton, N. J., asks: "Is there any cactus with brilliant red flowers, sufficiently hardy to stand our winters?"

"Opuntia Rafinesqui blooms freely here in any sandy waste, and I would like to find some red variety to grow along with it. Would it be possible to produce a hybrid between O. Rafinesqui and some of the red ones?"

[Echinocactus phœniceus, a deep crimson, is probably hardy in New Jersey, and E. Simpsoni with Mamillaria vivipara, both from the Rocky Mountains, and quite hardy, are "red" ones also. There is a variety of O. Rafinesqui, named by Dr. Engelman, O. Rafinesqui oplocarpa, with flowers of light straw, but shading to orange red at the base, from which a very dark Opuntia Rafinesqui might perhaps be obtained by selection, and perhaps by hybridization as suggested by our correspondent. —Ed. G. M.]

DAHLIA STEM BORER.—E. S. Miller, Wading River, L. I., N. Y., says: "I was surprised that you never heard of the Dahlia stem borer. Twenty years ago it used to trouble me. It would bore out the stem when from six inches to a foot high. Of course the stem died, when the buds from below the borer's track would grow, making a much shorter season of bloom. I have not seen it late years, though I grow usually ½ to 1 acre of Dahlias."

And W. A. Manda, Botanic Gardens, Cambridge, Mass., adds the following: "The Dahlia stem borer you mention in your last MONTHLY, came to my notice in my early apprenticeship in Bohemia, and then again in Vienna, Austria, where it was even more destructive than in the former place. I have not seen anything of this enemy in this country yet, though we have something over five hundred Single Dahlias planted out this summer, some of which are really beautiful. In my native language we call this borer 'Skvor,' what would be the 'Earwig' in English.

"The best way to destroy this pest is to take a small flower pot, fill it with dry paper loosely about one-third of the pot, and then suspend inverted among the plants. They soon find this out as a good dry hiding place, and are easily caught by inspecting the pots early in the morning."

DESTROYING CHICORY AND SIMILAR WEEDS.—We give the inclosed here in order to repeat advice to a New York correspondent that may be useful to others elsewhere: "Can you give me any advice as to how to destroy or get rid of chicory when it gets possession of a lawn? I am asked the question by a lady who has tried every means to extirpate the plant. She has dosed it with salt, and she has pulled it up by the root; but it will grow again in greater quantity from the portion of the root that breaks off."

[No plant can live long, no matter if it is as persistent as the Poison Vine, if we prevent it from making new leaves. As soon as the young and tender leaves appear, cut the whole plant off just under the ground. A second crop may possibly appear, when cut them again. We have known a feeble attempt to make a third crop of leaves, when another cutting ends the effort. If the leaves are permitted to get mature, food will be sent down into the roots which can then successfully resist the cutting out. It is essential to cut while the leaves are very young. Any tough weed can easily be destroyed in this way.—Ed. G. M.]

IMPROVED HEPATICAS.—Mr. W. F. Bassett, Hammonton, N. J., says: "Years ago, in my boyhood, when roaming over the fields and in the forests of 'the Old Bay State' in search of nature's floral treasures, I found several Hepaticas of remarkable beauty and semi-double. One of these was deep velvety blue, and one deep pink. I removed them to the garden and kept them for several years, and if I could now get hold of varieties as fine, would prize them higher than many of the high priced novelties."

[In gardens in Europe there are varieties of double and single and of many shades of colors; and possibly these are already in some American gardens where hardy herbaceous plants are appreciated.—Ed. G. M.]

TREATMENT OF RHODODENDRONS.—A Virginia subscriber asks: "How shall some Rhododendrons, transplanted last fall and not protected from the winter and spring winds, be treated? They survived, but that is all. Very little growth this summer—vitality much weakened. Am now giving them liquid stable manure bi-weekly."

[We have never known liquid manure to be applied to Rhododendrons, nor indeed manure of any kind except that which may be in the form of dead wood or leaf mould in which they certainly delight. They require a soft, spongy soil in which the delicate hair-like roots may get air and moisture, and be preserved from hot sun. The foliage does not mind heat, so that the roots are kept cool in a well aerated soil. In the winter protect them from dry winds by throwing some branches over the plants till they are fully recovered.—Ed. G. M.]

HALL'S JAPAN HONEYSUCKLE.—"E. S. W.," Berlin, Mass.: The plant sent is Lonicera Japonica. It is known in nurseries as L. Halliana, because it was introduced to America by Dr. Hall. What is commonly known as Japan Honeysuckle appears to be Lonicera brachypoda. This has shining evergreen leaves, and is a great creeper over the ground.

INJURY BY THE SEVENTEEN-YEAR LOCUST.—Some very intelligent people write what to do with the larvæ of the seventeen-year locust, which the entomologists tell them "must do" immense injury by feeding on the roots of fruit trees for seventeen long years. We have no evidence that they really do any injury by feeding on the roots, though theoretically, as the entomologist argues, they ought to do. A quarter of a century ago, Miss Margaretta Morris, distinguished for her knowledge of insect life, published a paper that attracted considerable attention at the time, contending that the well-known disease in the Butter Pear, was caused by the larvæ of the Cicada preying on the roots. She hired a man to dig round a large tree of this variety, and collect and count the enormous number picked out from the earth around. There were other varieties of Pear on her ground as healthy as Pear trees could be, bearing perfect fruit after their kind, which she did not dig around and examine, but which the event showed had as many larvæ preying on their roots as on the Butter, and one can scarcely believe they would produce disease on the one and not on the other. This thought was suggested to her, but she would insist that that only showed that some varieties had the power of resisting Cicadian influences more than others. To her death she fully believed she had discovered the cause of the cracking of the Butter Pear.

The fact is, that there are hundreds of old Pear trees in this vicinity, which during the century or more of their existence must have sustained many generations of Cicada larvæ, that are just as healthy as pear trees can be.

We might answer the question, How is it possible that a tree can have thousands of insects preying on its roots without injury? by the childish reply, "Because it is." We know there is no injury, and the fact ought to be enough. Possibly the explanation may be found in the fact that all trees have thousands of roots for which they have but a temporary use. Thousands of roots die annually under every large tree. It may be that it is no disadvantage to a tree to lose by these insects what they lose anyway; but whether this or any other explanation be the true one or not, the fact remains that no fruit or tree grower has ever had any actual evidence that the larvæ of the seventeen-year locust ever did a tree injury.

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Flowers in winter, is now a great aim, and it has got to be in a measure anything so that it be flowers. The great variety of beauty which flowers afford is seldom thought of, and if we have Roses, Bouvardias, Carnations, Heliotropes, and, if one desires to be a little more aristocratic, a few Orchids, it is about the extent of our demands. Still, these are sweet and pretty, and the small list is perhaps due to the cheapening process which will give us a whole houseful of one thing for much less figures than we can grow a great variety in one house. A great mixture demands great skill, but a house of one kind is so easily mastered in its details that any smart boy can soon be taught to successfully manage it. But even in these simple processes experience is a great help. As noted, any smart boy can soon be taught to grow Roses, but there is a very great art in knowing how to grow winter Roses well, and it is those who succeed in growing these winter flowers to the greatest perfection that make the most money if they are commercial florists, or get the most pleasure if they be chiefly amateurs whose profit is in the pleasure that gardening affords.

In offering hints for successfully growing winter flowers, a difficulty arises from the varying circumstances and situations of each grower. It is impossible to give detailed descriptions of houses, or of practice suited to each, but there are general principles that are everywhere recognized by experienced flower culturists, and these must serve for "Seasonable Hints."

For one, we can remember that the brighter and more direct the sunlight the more flower. Hence it is a good thing to have the slope of the glass as nearly at a right angle with the sun's rays as possible. And we want all the light we can get, sunlight direct, or reflected light if no other.

Air or ventilation is not regarded as of so much consequence as it was once thought to be, and houses with full flowers all winter are often kept with sashes all closed. Fresh air for all growing purposes seems to find its way in through chinks and crevices. Still we fancy good growers will yet arrange for an abundance of fresh air if they can get it warm enough. Roots like fresh air, and this is one effect of watering. The bad, exhausted air is driven out every time water is poured into the soil, and when the water goes out fresh air follows. Hence a soil that dries rapidly—that wants water often, is much better than one that needs little moisture. And so we like soil rather shallow in the benches or pots, and well drained. On the other hand, soil that is often watered, soon becomes poor. The rich material is washed out; so that, to have fine flowers, guano or other concentrated manure may be frequently applied to the surface.

In mixed houses, where so much enjoyment is to be reached, much the same hints may be given in a general way. But there are more matters of detail requiring attention. In taking up things from the ground for potting, care should be taken to have the pots well drained, with pieces of potsherds over the hole. The more rapidly water passes through the soil the better plants will grow. Pots could be made without holes, and the water would all go through the porous sides in time; but that is too slow a way, so we make a hole to admit of its more rapid escape, and we place the broken pots over the hole to make a vacuum, which assists the objects of the hole. In very small pots, or with plants which have strong enough roots to rapidly absorb all the moisture

they get, and speedily ask for more, "crocking" is not necessary.

There is quite an art in lifting plants from the open ground into pots, if they are to go on and bloom all the winter time. It will not do to let the leaves wilt much, or they will not get up again. They have to be taken with reasonable ball, put into the smallest possible pot, well watered at once, and placed temporarily where the drying air will not draw the moisture from the leaves. The florist who has to lift Bouvardias or Chrysanthemums from the open ground to benches in the greenhouse, so as to have them in flower all winter, keeps the greenhouse closed, for a few days, so that the moisture cannot get out. He syringes, to add to the atmospheric moisture, and even shades the glass, for it is now known that light is as great an evaporator of water as heat itself. One with a few plants need not go to all this trouble, but can apply the lesson from the larger scale to the smaller one.

Bulbs for flowering in pots should be placed at once. Four or five-inch pots are suitable. One Hyacinth and about three Tulips are sufficient for each. After potting, plunge the pots over their rims in sand under the greenhouse stage, letting them remain there until the pots have become well filled with roots, before bringing them on to the shelves to force.

All that we have so far written has been with the view of getting plenty of flowers with an abundance of light. But in room gardening light cannot always be had, and fortunately there are plants like Begonias, Oxalis, Tradescantias or Spiderworts, that flower with little sun, and then there are numerous shade-loving plants with leaves as pretty as any flowers.

COMMUNICATIONS.

CACTUSES.

BY A. BLANC.

It is astonishing what an interest the New Orleans Exhibition has awakened in Cacti.

True enough, they only need to be seen to be admired, and yet the majority of florists cannot bear them—perhaps, because there is no money in them.

I have a collection of about 400 varieties, mostly small plants, but good bloomers; and even when not in bloom they are always interesting to me. To watch the plants grow, develop their many colored spines, form their buds, expand their beautiful flowers and bring forth their brilliant seed-pods, is to me just as fascinating as to look over a collection of valuable paintings.

When I say florists can't bear them I must except our friend Mr. John Thorpe, who in answer to that imputation writes me as follows: "You are mistaken when you say I hate Cacti; I love them, but in this greed to live there is no opportunity to make Cacti what they will be in twenty-five years. When I tell you that two of my most intimate friends are Pfersdorff of Paris, a man that has actually slept with a Turcshead for his pillow, and Mr. Peacock, of Hammersmith, London, who has had Cereus cylindricus for a bed-fellow, you will not say your friend John Thorpe hates Cacti."

Mr. Thorpe, by the way, has probably the finest Pilocereus senilis in this country. It stands forty-six inches high.

Although for some years I have been supplying

Astrophytum myriostigma.

leading European houses with rare Cacti, yet I found it almost impossible to get anything like a complete collection for my private use. So at last I have concluded to send to Europe for specimens of every variety catalogued there, which amounts to nearly nine hundred. It is probably about the best way to get them correctly named, which is a very important item. I have had much trouble in this respect, with some thirty correspondents in Mexico and out West. Ask them for Echinocactus Sileri, Astrophytum myriostigma, or the Red Night-blooming Cereus, and they answer: "Oh, yes, we have them." When at last you pay ten dollars expressage on a box of samples, you get some Opuntias or a Cereus Peruvianus.

Many Cacti may well be grown for their beauty of form and spines; for instance, Echinocactus Sileri, Whipplei, viridescens, etc. I think one of the handsomest is E. Ottonis; the flower also is splendid although not fragrant.

Cereus, are my favorites, especially the night-bloomers. I have a C. nycticaulis, raised from a three-inch cutting three years ago, that to this date (July 6th) has opened sixteen flowers this season and has yet twenty-one buds to open. Until this year I kept it growing to one stem, in a 6-inch pot and trained it along the roof of my small greenhouse, where it received plenty of sunlight during winter. It made a growth of fifteen feet in two seasons. I have about ten other varieties of night-bloomers, but I find but little variation in the flowers, except as to size and perfume. The true red bloomer, Cereus Schmidti, has not bloomed for me yet, neither has the variety sent to me from Mexico as a red night-bloomer; (three Mexicans swear to it) and of which I do not know the name.

The Astrophytum myriostigma, called in Europe "Bonnet d'evêque," (Bishop's hood) is a very interesting Cactus, being, I believe, the only one without spines. I don't see how Aloe longiaristata could ever have been mistaken for it.

Philadelphia.

CULTURE OF THE CACTI.

BY N. ROBERTSON.

I am glad that my brief article has brought out Mr. Siler's remarks, for they are such as all growers may benefit by. The instances he gives are in accord with my ideas, only in so far as their ability to endure cold is concerned. What I said was not to show what amount of cold they could stand; 45° was only intended as a general storage temperature. Some of the species might be benefited by a lower and perhaps a higher; but I have always been very successful at this and mine is a very mixed collection. If we get to a lower temperature than what I have mentioned the air is sure to become so pregnant with moisture during our long winter months as to be injurious. We dare not ventilate from the outside during winter, and the sun's rays have very little power. Mr. Siler has mistaken the intention of my article, for I had no idea of giving how much cold they would stand. He says, "I do not know how cold it is in Canada at 45°, but here in Utah," enumerating different species that will stand out in their native places, and do well with frost 22° below zero. Some of those I have tried with our winters and although I have in some cases resorted to covering, protecting in the dryest manner, when spring came I invariably found them a rotten mass. But I must remark that our temperature falls frequently below those he gives. Yet, I find they suffer from a very few degrees of frost. The reason why, I am not prepared to say. It would be a good thing if they could be left out permanently, for they are not the most agreeable things to handle of the vegetable kingdom.

As to his finding a number of Agave Utahense and Mamillaria vivipara, standing in water and in health, this will be a new thing to most growers of them. Surely Mr. Siler does not infer that this is the better mode of treatment; if he does, why then give us the natural state in which they are found in the greatest perfection? He says (enumerating several species) that they grow on the well-drained hillsides, and on the sandstone ledges, in many instances with hardly enough to cover the roots. Other two are found exposed to the fierce heat of the summer's sun "where hardly a lizzard is to be found," and that this agave is found on the same ledge is enough to prove the treatment they will enjoy most.

His remarks on the soil they are found in will be most interesting to all parties interested in the Cacti culture, for I know that much diversity of opinion exists on this. Mine may not be the best one, but it has proved to me the best alternative I have yet found. It must also be remembered that no amount of water in the positions in which they are found can lodge in such a way as to stagnate, and hurt them. When planted out under the same conditions I say, pour away as much water as you like when they are growing, and you will benefit them; but at rest, if you want flowers the next season, it will be better to refrain from it. This partial drying process has always given me good results whilst the other has proved the contrary.

I quite agree with the Editor's remarks, that under culture we cannot always rely on imitating natural conditions. We must learn from experience. I say, yes, and often improve upon it, for it is a most difficult task to get close to nature and take in all surroundings and all other things adapted to positions chosen.

But an understanding of the natural laws and substances that control the production of such plants must always prove beneficial and conducive to their proper treatment; and I am sure that Mr. Siler's remarks on this subject will be much appreciated by all lovers of this class of plants; a class that deserves more attention than there has been given, for they always make a

most interesting bed. They are much looked at for their curious diverse appearance. But no one need expect much success with them if the position chosen retain water for any length of time; at least such is my experience with them in our climate, and Mr. Siler's remarks surely confirm the advisability of particular attention to it.

Gov't Grounds, Canada.

[We think the cases Mr. Siler referred to, where water was continually poured on the plants by mistake, were not cases where water was retained. The water so freely given no doubt passed away freely. In regard to Cactus culture Mr. Robertson's practice is certainly the proper one; that is, plenty of water in the hot growing season, always provided it passes rapidly away, and plants kept rather dry and cool in the resting period.—Ed. G. M.]

VERBENA CULTURE.

BY E. L. KOETHEN.

The culture of the Verbena is not nearly as well understood by the average gardener or florist as it should be, and I believe that most of the more successful cultivators have yet much to learn. It is therefore with the hope that I may be able to throw a little light on an important topic which may be of benefit to some that I am about to attempt to give my ideas on the subject. I am often somewhat surprised to find that otherwise successful florists do not even attempt to grow their own Verbena stock plants. And just here let me say, that though this might not aid any practical florists, it will probably be read by some amateurs who will be benefited thereby. There is too much reluctance displayed by some practical men in disseminating horticultural knowledge. I hold that success in culture by the consumer of plants makes increased demand for our products. We therefore do ourselves an absolute injury when we pass an opportunity by to disseminate knowledge, without availing ourselves of it.

To begin with, I wish to find fault with a statement made by Mr. Henderson in his "Practical Floriculture." He says, "Verbenas, whether grown for sale or for private use, if we would have plants in fine health and vigor in May, should not be propagated sooner than January. The stock plants propagated in October or November become exhausted by spring and are inferior to later propagations." The above is all very true if you propose to keep the older plants in small pots until May. The Verbena delights in cool weather, and if planted out early will do far better through the summer. It is my practice to select nice bushy plants free from rust and green fly (but there is no excuse for green fly to make its appearance among plants in the houses), and plant them out as early as the first week in April if the ground can be worked to advantage; planted thus early they will become well and deeply rooted before the hot, dry weather sets in.

I have often heard the opinion expressed that seedling Verbenas do better than greenhouse plants. So they do if sown early and the usual long starved plants are put out late in May. It is very natural that they should, being full of vigor and life, while it takes the sick pot plants a month to get ready to begin to grow. Not so with a nice thrifty pot plant; it has the advantage over the seedling that it can be planted when the seed is sown and thus it has at least three weeks the start of it.

My plants at this date (June 25th) which were planted out early in April have an average of fifteen fine large blooms to each and are in all the full vigor of growth as usually seen in August. Last year the stock plants were covered with three inches of snow after they were set out, and I never saw better ones in May, although the outer edges of the leaves were nipped a little. The rapidity of their growth was remarkable after they took a start.

Verbenas require an abundance of nourishment, and I find the use of liquid manure applied to plants in pots a decided benefit to them. As to the stock plants which I do not require for planting out, they are shifted into 3-inch pots and plunged into a hot-bed where they make fine large plants that will bring double the price of ordinary 2-inch pot plant Verbenas. We thus provide something nice for our best customers who have failed to set out early. Plants thus grown will be provided with from five to eight branches and look far from being weakened.

Zanesville, Ohio.

[This is a very timely communication. In this part of the world the Verbena has almost disappeared from cultivation, growers protesting that they soon become diseased and worthless. And it has become a sort of by-word that only those buy them that know no better. There is no gainsaying that they are far more liable to disease than they once were, and it is worth inquiry how far the methods of propagation may have had an influence in giving us a stock with a weakened power to resist disease. The Verbena is too beautiful and too useful a plant to be permitted to sink to oblivion without an effort to save it.—Ed.G.M.]

STEAM HEATING A SUCCESS.

BY N. B. STOVER.

I have carefully read and studied every article contributed to your valuable journal in favor and against steam heating but have not found in one article anything that compares with the heating of E. Hippard's establishment in Youngstown, Ohio. Of this establishment I am foreman and can truthfully testify to the merits of steam.

For the benefit of your numerous readers I deem it my duty as a florist to learn and teach all I know. The above named place is one of the best built and arranged commercial greenhouse establishments I have ever seen, covering upwards of 12,000 square feet of glass. The boiler used to heat this amount of glass and work-shop, also a dwelling house of thirteen rooms and large hall (every room is heated), is a small 15-horse power locomotive style Taft boiler; the piping consists of over four thousand lineal feet of two-inch gas pipe and nine large radiators, costing for the past very cold winter only a trifle over $90. The attention required for firing was not much. In the coldest weather when the mercury would go to 18° and 20° below zero I would not lose two hours' sleep in such a night. The pressure was never over five pounds of steam, and in ordinary weather from one to two pounds were plenty.

The boiler is set eight feet below the surface of greenhouse floors, and so arranged as to cause all condensed steam to run back to boiler without a steam trap, only by grading the pipe to a continuous degree of two to four inches in one hundred lineal feet. The boiler needs water about every six or ten days, and certainly could never fall so low as to cause any danger by burning crown sheets or flues. By a novel and very useful invention gotten up by Mr. Hippard I can without any fear of oversleeping myself lay down and sleep with perfect confidence; the arrangement is so constructed as to call by a bell when the heat goes down or up to a certain degree we set it.

Youngstown, Ohio.

SCRAPS AND QUERIES.

LINSEED OIL AND SULPHUR AS A CURE FOR ROSE MILDEW.—We have a number of inquiries in regard to Mr. Veitch's remedy for mildew, in Feb. No., page 39. The tenor of all is, that Mr. Veitch has not given the proportions. But we do not think any exact proportioning of parts is necessary. He says: "My remedy consists of sulphur and linseed oil, mixed to the consistency of paint, and brushed on the flues or hot-water pipes."

Of course there is such a thing as thick paint and thin paint, but it will make little difference here. We have watched the application of this remedy, and think the chief virtue of the oil is that it keeps the sulphur in place on the pipes. Sulphur would naturally roll off a round pipe. When in the oil it has to stay where it is put. There may be some other use for the oil, but this certainly is one. Whether more or less is used can make but little difference.

FLOWERING OF THE NIGHT-BLOOMING CEREUS.—Mr. E. S. Miller, Wading River, N. Y., writes: "Seeing your note on the flowering of C. Macdonaldii in Kansas and Virginia about the same date, June 6th, I thought it of interest to note that mine was flowering in another section of the country. Two flowers opened on the 9th of June, two on the 10th, one on the 11th, and others about a week later. Some of the flowers remained fully expanded until the following day as late as 8 or 9 o'clock, though these did not open till evening, while those which closed early, opened early, before dark."

[Singularly enough, a plant of the Night-blooming Cereus that had already bloomed in June, under the observation of the writer, had another flower open on the 4th of August.—Ed. G. M.]

BEGONIA FEASTII.—Mrs. E. Bonner, Xenia, O., says: "In the GARDENERS' MONTHLY for August, you refer to the death of a florist friend, Mr. John Feast, of Baltimore.

"Among the plants mentioned as having originated at the Feast greenhouses, and bearing the name, is Begonia Feastii. We have had for some years a Begonia that we catalogued under that name, but we have never felt sure that we were right. Will send a plant to know if we have the true Feastii. It is an old plant, and very easy of cultivation, yet we rank it among the best in our collection. It certainly is very beautiful, with its shining, olive green leaves, "veined nearly white," under side crimson. It is a profuse bloomer in the latter part of winter and early spring; flowers, a very delicate pink color. I hope we are correct in the name, for we love the Begonia, and the history you have given of it will enhance its value.

"If we are mistaken in the name of the plant we

have, I should like the correct one, and if you will inform me where I can get the true Feastii, will be much obliged. Will also send a seedling Begonia of ours, which we have named Hybrida Richardsonii. You will perceive that is a hybrid between Richardsonii and parvifolia, bearing marked characteristics of both its parents, and still a great improvement on both. We find it the best blooming Begonia, for all purposes, we have in our collection."

Cypripedium œnanthum superbum. (See description, page 269.)

[It is correctly named, Begonia Feastii, and, as our correspondent remarks, one of the most beautiful yet. One of its parents was an old species, B. hydrocotylæfolia. But we do not remember that we ever knew the other parent.—Ed. G. M.]

NEW OR RARE PLANTS.

CYPRIPEDIUM ŒNANTHUM SUPERBUM (see cut).—Messrs. Veitch, of Chelsea, near London, continue the work begun by their father thirty years ago, hybridizing orchids, and are continually raising new ones quite as distinct and beautiful as original species. Of the one which we now illustrate they send us the following account:

"One of the most striking of the hybrid cypripediums raised in our nursery. It was obtained by crossing C. Harrisianum with C. insigne Maulei.

"The plant is of vigorous growth and has foliage like that of C. insigne, but of deeper hue. The flowers are large with a lustrous varnish surface. The color of the dorsal sepal is deep claret-red with broad lines of blackish-purple spots that are confluent. It has a very broad, white margin, and where the spots enter it, they are of a beautiful mauve-purple. The lower sepal is greenish, with lines of blackish spots on the basal half. The petals are vinous-red with deeper veins, except at the base and apex, where it shades off into pale green. On the inferior side of the basal half are from 10 to 12 blackish worts. The lip is deep vinous-red, shaded with brown; the staminode buff-yellow tinged with red.

"We know of no cypripedium that presents such a remarkable combination of colors as is seen in the flower of this beautiful hybrid."

ROSE, "HER MAJESTY."—Messrs. Charles F. Evans and Craig Bros., of Philadelphia, have bought the entire stock of this rose which was raised by Mr. Henry Bennett, of Shepperton, England, who considers it his finest production. It is a cross between the hybrid perpetual Mabel Morrison and tea Canary. Its immense size, perfect symmetry, and exquisite coloring, combine to make it popular; it is the largest and finest rose ever introduced. It will be of special interest to florists who grow roses for the cut blooms; the grand flowers of Baroness Rothschild, Paul Neyron, Anna de Diesbach, Mad. Gabriel Luizet, and others of this class produced of late years, have developed a taste for very large roses which will be abundantly gratified by "Her Majesty." It is of most vigorous growth and entirely hardy.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

The great progress which market gardening has made in cheapening the cost of producing fruit, has not been favorable to that excellence which the lovers of good fruit usually aim at. But even as a matter of profit it has come to be recognized that he who produces the best fruit makes the most money. This is especially true in regard to fruit in season, when fruit is a drug in the market. First-class fruit even then sells and always with a good profit. Hints, then, looking towards excellence, may not be out of place at this season.

To our mind much of the pleasure of fruit-growing lies in learning all about fruits,—not merely the names of the varieties, but of the habits and wants of each thing we grow, and a very pleasurable part of one's garden would be that set apart for cultural experiments. There is no reason why strawberries, raspberries, gooseberries, currants, grapes, and other things, may not be tried on different cultural plans,—and the knowledge derived will be fully equal to the pleasure derived from the experiments themselves. For instance, in our last there was a note about the benefits the old gardeners found from cutting off the leaves of strawberries as soon as the fruit is mature. It would give great zest to a gardener to have a dozen plants under such a treatment side by side with a dozen under regular garden treatment; and many things do well only by special care. If, for instance, we ask the average fruit-grower why he has not such delicious raspberries as Brinkle's Orange, Hornet, or Herstine, he will tell you that they are too tender,—but if we go into the garden of the amateur fruit-grower who grows fruit because he loves to grow it, we find him not objecting to laying the canes down and covering with earth, and

then they are hardy enough. We have seen these in Germantown gardens the past season, sights truly lovely to behold, and well repaying the extra trouble given to them. It is just in such attentions as these in fact that the pleasures of gardening, aside from the mere profits, consist,—and it is the line of gardening above all that we love to cultivate.

Even vegetables, which, more than fruit, enter into the absolute necessaries of life, give to mere pleasure much material by their superior cultivation,—and we know of some people who derive as much satisfaction from their little garden patches, as others would do from a voyage round the world. For some of these we could give no suggestions that would be new to them. But there are others, younger and coming on, to whom some practical thoughts at this season may be of benefit.

Lettuces sown last month will now be large enough to set out for permanent growth. A common hot-bed frame, set on a bed of leaves or spent stable manure, will enable one to enjoy delicious salad all through the latter part of winter where sufficient protection against severe frosts can be secured. In this division of our hints, it is more of an object to preserve them through the winter for the purpose of setting out in the open air in spring. In the States this can be readily effected by their being set out in the open air in a sheltered place. Here in Pennsylvania they often do very well by having the ground thrown into ridges about six inches deep, running east and west, and the plants set out on the northern sides. They have a little straw thrown over them in severe weather, and get through the winter admirably, heading early in spring. The Early York cabbage is extensively grown in the same way. Where the climate is too severe to allow of this, they must be put under cover of shutters, as before described in our hints.

Cabbages can be preserved in such a cellar, though most prefer them in the open air. One way is to pack them closely together with their roots uppermost, and then cover them with soil, on which straw or litter is thrown to keep them from freezing. By being packed this way, the water cannot get into the hearts, which is one of the chief causes of their rotting. Where plenty of boards can be had, they may be packed with their heads uppermost, and the rain kept off by the material.

Broccoli and Endive may be taken up with balls of earth, and set in cool cellars closely together, and they will grow sufficiently—the former to produce good head, and the latter to branch beautifully all through the winter.

Asparagus beds should be cleaned, by having the old stems cut off and the soils from the alley ways dug out and thrown over beds. It keeps the frost from the roots, and thus permits them to grow and lay up matter all winter for next spring's growth. Very early in spring the soil should be raked back into the alleys, so as to leave the roots but a few inches under the soil, as the nearer they are then to the sun's rays the earlier will the crop be.

Celery must have continued attention to blanching as it grows, care being exercised to prevent the soil from entering the heart. Where very fine results are desired, the plants should be protected from early severe frosts, so as to enable the plants to grow without injury as long as possible.

Roots of most kinds, such as carrots, beets, etc., should be taken up before the frost is severe. They all keep best packed in sand in the open air, but it is too inconvenient to get at them in winter; hence cellars are employed to preserve them in. Cellars for this purpose should be cool, say with temperature of about 45°, and not all dry. It is not meant that it should be damp, as the roots will become rotten, but it must be moist enough to prevent shriveling.

However, if any protection can be given so as to enable one to get at the pit in frosty weather, most things keep better so than in any way. Celery keeps very well packed in earth, so that the frost does not get at it; but it must be laid with the tops sloping, so that the water may be kept out of the heart.

COMMUNICATIONS.

CABBAGE MAGGOT.

BY MANSFIELD MILTON.

"J. R.," page 238, has only had in his 120 cabbage plants the experience of many a market gardener in this section with their thousands of plants. This maggot on the cabbage is getting to be a great enemy to the raising of early cabbages. They make their attacks upon the plants shortly after setting out, and act just as J. R. describes, stripping off all the roots, and leave nothing but a rotten stump, from which often a few weakly roots are sent out near the surface. When only a few eggs are hatched the damage to the plants is not so severe, and often recover, so that they make a good growth afterwards; but when they are attacked with the numbers described by your correspondent, then there is very little chance for the plants, unless the remedy for their destruction has been used, which is bi-sulphide of carbon; this must be used with the greatest care, as only a small portion kills the plants as well as the insects. The means of applying it is to bore a small hole with a pointed stick close to the plant, and put in a few drops of the liquid. This remedy proves effectual every time, and can be used with profit on small patches, but in large patches I have not seen much profit; it is too expensive.

To our market gardener I sold this spring 5000 cabbage plants, which were all destroyed by this pest. I lost about 2000 myself, and I may safely say that at least half of all the early cabbage set out in this section was destroyed this season.

Youngstown, Ohio.

STRAWBERRIES IN FLORIDA.

BY CHARLES BLACK.

Noticing "Strawberries in Florida" in the August number of the GARDENERS' MONTHLY, I fear it will mislead many of your readers; so I venture to give my observations in Florida on the subject. I have been in Florida twice, and although I did not travel very extensively, I did not see any strawberry beds that would warrant the statement in the article referred to. From what I saw I should say that it would take several acres to produce 109 bushels, instead of getting them from one-half of an acre. They commence to bloom up the St. John's as early as December, and if not killed by frost will ripen a few berries in January, and keep on bearing and ripening a few until late in the spring. They do not do, as here, send up all of their bloom at once and ripen a full crop of fruit in a few weeks; but a few bloom at a time and ripen, here and there a berry, through January and February. I did not see them later than March, but up to that time I saw none that would warrant the statement of over 200 bushels per acre. My advice to any reader of the GARDENERS' MONTHLY would be, never to start in strawberry growing in Florida with the expectation of getting 200 bushels per acre.

Hightstown, N. J.

A DRY AUTUMN AND STRAWBERRIES.

BY MAX.

At this point not quite 1½ inches of rain fell from July 8th to October 20th, 1884. All vegetation suffered, but most of all small fruits, especially strawberries. From a plat of five-sixths of an acre, planted November 5th, 1882, which yielded over twelve hundred quarts in 1884, only five hundred were gathered this season.

Possibly want of proper culture had something to do with the result, but mainly the deficiency is due to the dry summer and autumn. Thus, leading pomologists, such as Mosby & Bro. and others account for the short crop. The question of interest to fruit-growers is, whether varieties are more or less adapted to circumstances of weather and climate? With us, in 1884, Sharpless' strawberry took the lead, but in 1885 we found that Triumph of Cumberland had withstood drouth better, ripened as early, if not earlier, and yielded more than doubly as much in quantity, equalling, indeed excelling, in size. The Wilson and Crescent City did fairly well. This leads us to recommend the T. of Cumberland and Sharpless for our limestone section. Then the raspberries. Well, the only one that did anything was the Cuthbert (Market Queen of some catalogues). It held its own, yielding well and maintaining its size, while the Hornet, Philadelphia and the H. R. Antwerp succumbed. The Black Caps did as well in the garden as in the field. In this section, little or nothing is gained by cultivating them.

The prospect for pears and grapes is very fine, and apples are abundant—peaches a failure.

Staunton, Va., July 21, 1885.

[The subject started by our correspondent is one of great interest to fruit growers. Are there varieties that are better adapted to some soils, or to withstand drouths, than others? The answer by all fruit growers with a limited experience would be prompt and emphatic, "Of course there are,"—but those of a more extended experience know that results are not always to be charged to the causes attributed to them. A variety becomes enervated by some circumstance, and it may be in competition with a variety that has retained its full constitutional vigor. Not knowing this, the observer would be very apt to consider that one "did not like his soil."

For instance, for a number of years the Albany seedling strawberry did better than any other in the district in which we now write. Though as sour as a cranberry, no one would have anything else, it was so large and bore so abundantly, with very little care. One might then say, "It liked the soil." Of late years it has declined. To-day we do not know where to go to get a plant. No one keeps it. It will not do now to say, "It does not like the soil." It has declined simply because of constitutional debility, and this debility is more

fairly to be attributed to climatal causes that induce the spread of fungus troubles, of which the "spot" on the leaf is one sure indicator.

We should, therefore, be very loth to accept the proposition that one kind had preference for one soil more than another, unless we were sure that the competing varieties represented plants with an equally sound constitution.—Ed. G. M.]

THE CABBAGE WORM.

BY MR. CHARLES E. PARNELL.

In the GARDENERS' MONTHLY for August, 1885, page 239, I see that J. R., of Elizabethtown, N. J., asks for information concerning some maggots that appear to be destroying the roots of his cabbage and turnip plants, and I think that I can give him a little information, although it will be of little or no use to him this season.

He may rest assured that the maggots are the cause of all his trouble, for they are what we know in this vicinity as the cabbage maggot, and they appear to be remarkably numerous and destructive this year.

This pest does not appear to trouble the plants until they are about half-grown, when the leaves begin to turn yellow and droop, and upon a close examination the roots are found to be partially decayed and full of little maggots. In this vicinity the cabbage is very extensively grown for the New York markets, and I have no recollection of seeing any infested with either the maggot, or with what is known as the club-foot, when grown on land that has been given a good dressing of lime, ashes, or if the crop has been fertilized with bone dust, superphosphate of lime, or any concentrated or chemical manure or fertilizer; so that I infer that their use is of decided benefit to the crop, and no one in this vicinity would expect to obtain a profitable crop of cabbage unless some chemical cabbage fertilizer was scattered in each hill.

The cabbage maggot is troublesome certain seasons only, and I think that it is advisable to use a little of any of the above-mentioned fertilizers as a preventive, rather than run the risk of losing the entire crop.

I do not think that there is any remedy that can be applied with benefit to the crop after the leaves of the plants begin to turn yellow. If the maggots are noticed before this occurs, a little lime ashes, or bone dust, scattered around on each hill, close up to the plant, and hoed in, might prove to be beneficial, but I need further experience to enable me to speak with certainty on this point.

No instance of the cabbage maggot troubling the roots of turnips has ever come under my observation, and I am inclined to the opinion that your correspondent is mistaken here. But still, if his turnips are likely to be troubled with anything like this, let him apply a dressing of lime, ashes, or any commercial cabbage or turnip fertilizer, and thoroughly incorporate it with the soil by repeated harrowings before sowing the seed.

Queens, Long Island.

A CHEAP TREE DIGGER.

BY W. C. STRONG.

Perhaps I may serve the nursery craft and others by describing a home-made one-horse digger, which has proved a very serviceable tool for my purposes. Taking a worn-out side-hill plough, the swinging mould board and some other appurtenances were removed, leaving but the thin iron frame under the beam. This frame was left to support a steel sword, or cutter, which was made to be about two feet long, and which went from the beam in front of the frame and extended eighteen inches below it. Any blacksmith can affix such a sword to such a plough at a cost of a dollar or two. One horse is equal to making a cut in ordinary soil from 15 to 20 inches deep. After a cut on both sides of a row, most kinds of small trees and shrubs will readily pull without breaking the roots. In some cases it is well to go a second time in the cut, driving the cutter down to its length and inclining the point under the trees. The advantage of this tool over the larger and patented kinds is in its trifling cost, and also in the ease with which it is operated by a single horse in any soil. Of course the large double machine is much better for large trees and extensive nurseries. But for many kinds of digging this smaller cutter will serve the purpose equally well and at less expense in operating.

Brighton, July 30th.

NEW OR RARE FRUITS.

ELBERTA PEACH.—The following note is from Mr. John H. Parnell, West Point, Georgia, under date August 1st,—the fruit reaching us in perfect condition on August 4th:

"I send you a crate of one of our best and newest variety of peach, the Elberta. It is a seedling of the Chinese cling, but is a freestone peach. They are from my orchards near West Point."

This is of that excellent class which under the lead of Crawford's Early has made itself indispensable to the peach grower. This, like that, is a good

solid heavy peach of rather better quality as regards flavor and juiciness than that popular variety. The exact value will of course have to be decided by an actual test with that kind. As we however believe it will be a variety of permanent merit, we give a drawing and description: Form, oblong oval; length, 3 inches; lateral circumference, 8¾ inches; weight, 6¾ oz.; form of suture, oblique; skin, golden yellow, deep red in the sun; flesh, yellow, solid; juicy; deep red round the stone; stone, lanceolate, very sharp pointed.

THE JEWELL STRAWBERRY.—Many so-called "new" fruits come to-day and are gone to-morrow, that it seldom seems worth while to encumber our pages, which we hope will be of permanent value, with large illustrations. We make an exception in this case because it appears to be a variety of substantial character, having received a silver medal from the Massachusetts Horticultural Society at its June meeting, on its great merits as a new seedling. Its parent was either Jersey Queen or Prince of berries. It is a pistillate, ripening in mid-season, of large size, bright red, and very productive. Raised by P. M. Angur & Sons, of Middlefield, Conn. (See cut next page.)

SCRAPS AND QUERIES.

BLACK KNOT.—"Reine Claude," Frankford, Phila., writes: "It seems to me that the black knot on plum and cherry has taken a renewed lease of life this year. Some ten years ago I had it very bad in my garden, and I thought I had destroyed it by cutting out the worst parts and burning. I had no knots in my garden. Where does it come from and what is the remedy? It seems to me it must be more than usually prevalent this year, judging by the gardens of my neighbors."

The plum knot is the work of a fungus known as sphæria morbosa. The spores are doubtless ever present, and cutting out and burning the knots in the hope of stamping out the trouble, would be of no more use than burning a dozen cubic feet of air in order to destroy the germs of yellow fever infesting a whole neighborhood. Germs of these troubles are doubtless ever present in myriads, and grow only when the season or the subject is favorable to their development. When a plum or cherry tree is badly infested with knot, it may as well be cut down, thrown away, and a new one planted in its place.

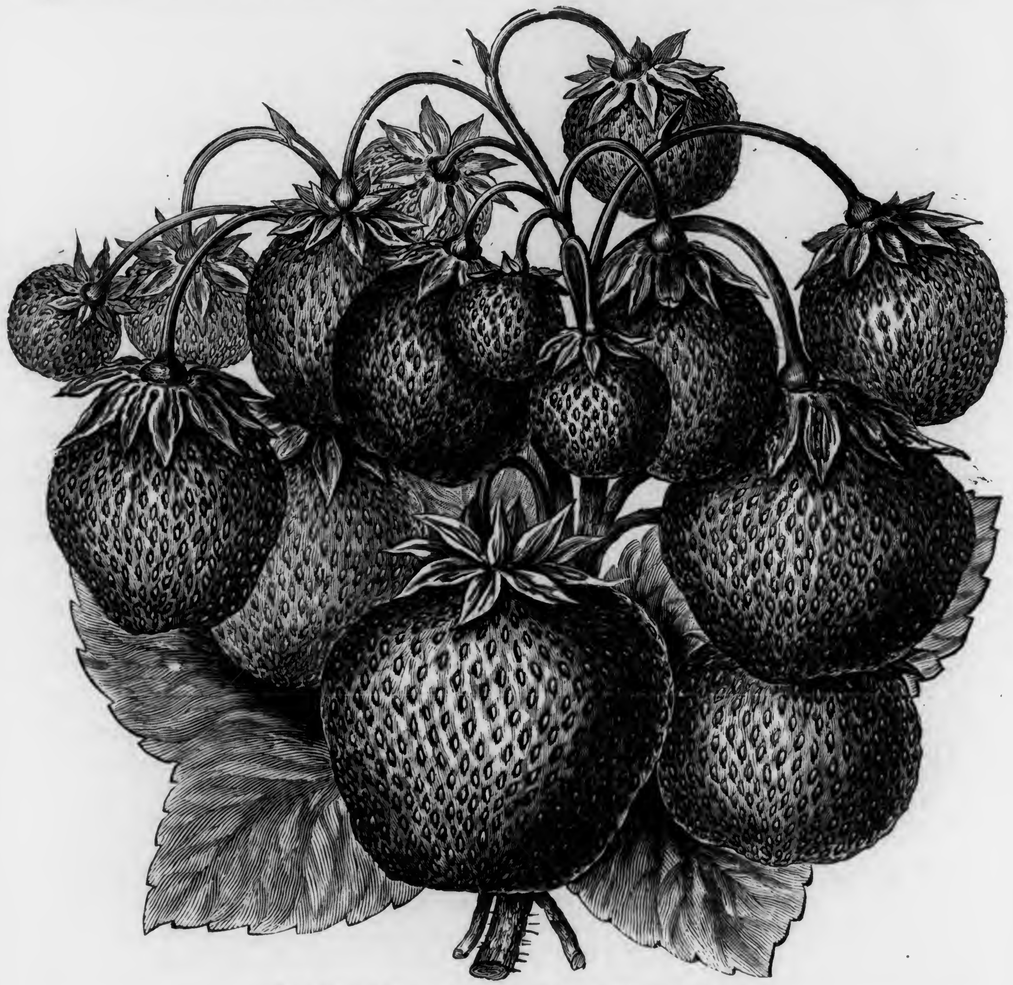
The only remedy is in preventing the spores from germinating even though conditions be favorable. Sulphur is inimical to the the great part of these minute organisms. It is tolerably clear that they germinate from the outside, and if some wash in which sulphur forms a part, be applied yearly to a cherry or plum tree, we have an idea that the black knot would seldom be troublesome. In old well-cared-for, Dutch gardens in Pennsylvania, where the trees are annually cleaned with simple lime wash, black knot is almost unknown.

QUICKSILVER FOR THE PHYLLOXERA.—A correspondent believes that a little quicksilver mixed with dirt or sand, is used successfully against the Phylloxera in France. Does any one know of the exact proportions or manner of use?

TO KEEP ZINC LABELS FROM WEARING.—Mr. E. S. Carman says: "Referring to what "F. W." says (page 164 GARDENERS' MONTHLY), let me say: Use copper wire, and pass it through the hole twice or thrice, instead of once, forming a loop; draw it as tight as can be, and the label will never move upon the wire afterwards."

FORCING STRAWBERRIES.—Mr. M. J. Nagel. Jefferson City, Mo., writes: "I see the question in June number of the GARDENERS' MONTHLY has not been answered, in regard to forcing straw-

berries. I forced strawberries for many years with good success. I forced strawberries in a hot-bed frame with one steam pipe running through. I put the plants as near to the glass as possible, say 9 inches at the lower end and 12 inches at the upper end of the hot-bed frames. Let them have as much fresh air as possible without freezing them; and for the sun in February I had matting made of pine sticks ½ inch by 6 feet long and ¾ of an inch apart. This I used every bright day till the plants had been hardened to the sun. I sprinkled twice every day to prevent the red spider, and had two plants in 5-inch pots."



The Jewell Strawberry. (See description, page 273.)

FIGS FOR DRYING.—"J. P.," Dixon, Solano co., Cal., says: "Oblige me by the following information if you can: Out here in California we have several varieties of figs. A few of them are good for market undried, but are perfectly useless for commerce. This climate is undoubtedly the best for figs in the world, perfectly dry and free from summer rains. They grow their two crops very abundantly. Taking these facts under consideration California yet does not raise any figs for export, and the reason of this is that we have not the proper sorts at command. I believe ere long California will rival the world in exporting dried figs. Now, what I want to know is about the dried figs that come from Europe, their names, habits and where to be had. The true fig of commerce is what is needed here, and when introduced properly you will hear of the great strides of fig growing on this coast."

[We have never understood that it was necessary to use any particular variety of fig in drying. The Smyrna fig, the one commonly used for drying in that part of the world, is also to be had in nurseries. It must not be forgotten that no fig will dry properly in its natural condition. In fig-drying countries each fig is dipped in scalding hot lye before it is placed in the sun to dry. This causes the pores to open and the fruit rapidly loses its moisture after this treatment. The lye is made from the ashes of the fig tree, all pruning being carefully saved for that purpose.—Ed.G.M.]

R. E. LEE PEACH.—These were received from Mr. J. H. Parnell, West Point, Georgia, on the 26th of July. It is rather larger than the average of early peaches that come to our table, measuring seven and a half inches round, and eight inches round lengthwise, it being rather oblong in form. In weight it is nearly five ounces, color greenish yellow, with deep rosy blush on the sunny side. Flesh, greenish white with very deep red around the sub-clinging stone. It is very juicy and rich, and excellent in eating qualities. If it does everywhere as well as in these Georgia specimens, it must be a very superior variety.

THE SPRINGFIELD BLACK CAP RASPBERRY.—"W. F. G.," Springfield, Mass., writes: "I send you by express a sample of our new thornless black raspberry, "Springfield." We claim it is the earliest black cap grown; is prolific and of extra good quality; also perfectly hardy and free from disease. The weather here is extremely hot, but I hope they will reach you in good condition. Ripens the last week in June."

[These reached us in a moist condition from incipient fermentation, on the 18th of July, but still with evidences that it might be a desirable variety. —Ed. G. M.]

THE ENGLISH GOOSEBERRY.—A letter received after our note on the gooseberry went to press, explained that it was an accidental seedling raised at Catawissa, Pa., and that it was sent to show that it was a very abundant bearer, and free from the mildew which is such a foe to most of the English race. This plant has been growing at West Chester four years and has been as clear of mildew all that time as the original plant at Catawissa.

FORESTRY.

EDITORIAL NOTES.

FOREST FIRES OF 1885.—This is a sample of what we have seen almost daily in the morning papers: "Large forest fires are raging at Harvey's Lake, twelve miles from Wilkesbarre. Fifty men are fighting the flames, and it is hoped they will be able to save the cottages in the vicinity."

In New Jersey alone the damages this year will not be less than $1,000,000. Fifty men clearing out underbrush and dead material from forest land, would render these forests secure and save the millions annually lost by fire. All we can do is to reiterate these facts. It may some day be somebody's business to get legislation in this direction.

THE AGE OF YEW TREES.—The *Garden* has an interesting paper on Yew trees, and their ages. One at Fountaine Abbey in Yorkshire, was certainly a large tree of great age when the monastery was founded in 1132. The trunk of one is now 26 feet 6 inches in circumference, 3 feet from the ground. The Tisbury Yew, at Tisbury, Dorsetshire, is 37 feet in circumference. It is now hollow and 37 people have taken breakfast together in the interior. The Arlington is in the churchyard of that village, near Hounslow. It has been 50 or 60 feet high. The Darley Dale Yew, Derbyshire, also in a church yard, at 3 feet from the ground it is 28 feet round. The Mamhilad Yew, in the churchyard of that name near Ponty pool, at 2 feet 6 inches from the ground is 29 feet 4 inches. The Gresford Yew, in that churchyard, near Wrexham, Derbyshire, is 22 feet at the ground, and 29 feet at 5 feet 2 inches, where the main branches separate. The Fortingal Yew, in Fortingal churchyard, near Glen Lyon in Perth-

shire, was, in 1769, 52 feet in circumference, but vandalism has taken away much of the famous tree to make drinking cups and other mementoes.

In the United States we have no very old trees, of course, but there is a noble fellow in Germantown on the grounds of Amos Little, which was planted soon after the revolution; and there was, if not now, a very fine specimen on the grounds formerly of Miss Longstreth in Kingsessing, which was planted by Young, who was the competitor of Bartram for the honors of being the "King's botanist," and who actually was the first to get the singular Dionæa or Venus Flytrap, to England alive. We have not seen this Yew for many years, but suppose the "march of improvement" will some day slay it, if it has not already done so.

PLANTATION OF H. G. RUSSELL, OF EAST GREENWICH, RHODE ISLAND.—The Philadelphia *Weekly Press* says this gentleman has 230 acres of forest planting. Part was planted this spring with two or three-year-old plants of White Pine. The land is coarse gravel or pure sand, and forms an arm of land in Narragansett Bay. It was considered totally unfitted for agricultural uses. The trees are set thickly and it is proposed to thin after a while, and the cost of cutting out paid by the thinnings. White Pine has been found to outgrow the Scotch Pine on this land in time. The Scotch grows faster at first, and hence should be planted with the view of being the kind thinned out. Larch has also been tried. The rows of Larches are four feet apart, and stand "quite thickly in the rows." The Pines are in every fourth row, and are 16 feet apart in each row, so when Larches and Scotch Pines are all taken out the whole will be a pure White Pine forest with trees sixteen feet apart. The Ailanthus has been but a partial success.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

DENUDED NORWAY SPRUCES.

BY H. F. HILLENMEYER.

The presence of small evergreen branches under the trees at the close of winter first attracted my attention two years ago. I do not think it the work of squirrels, for the twigs may be found on the new-fallen snow under isolated trees where it is certain that neither squirrels nor mice have visited them. That the injury is caused by an insect is highly improbable, as the twigs are found in greater abundance during periods of severe cold. The presence or absence of snow seems to be immaterial as a factor to the work. I hope that during the coming winter the cause may be positively determined. *Lexington, Ky.*

[We are somewhat of the opinion of Mr. Hillenmeyer, though the specimens from Prof. Buckhout show squirrels do sometimes cut the branches. On our grounds we have no squirrels, and yet the trees are as thickly strewn with branchlets—broken at the articulation—not cut by teeth—that the ground surface beneath the trees is covered. Prof. Riley finds no trace of insect life at the place of fracture.—Ed. G. M.]

THE ROSE—ITS PLACE IN ANTIQUITY AMONG FLOWERS.

BY JOS. H. BOURN.

The Greeks adored the rose, and the Romans bestowed praises on this flower of the highest antiquity. Anacreon sang its primal birth. Homer praised its form of grace, and borrowed the brilliant colors to paint the glowing richness of the rising sun. Herodotus exulted over the sixty-petaled varieties which grew spontaneously in the gardens of Midas in Macedonia. Catullus vaunted its charms, and Horace admired the "richly-tinted face whose bloom is soon fled." Virgil contrasts the pale sallow with the blushing hues, and extols the roses of Pastum with their "double spring." These costly ornamental gardens, destroyed almost ten centuries ago, no longer shed the morning fragrance of rose perfume. Nettles and brambles entangle the footpath of the traveller, and as a poetic memory the cyclamen and the violet now trail among the debris of the old city. Ansonius, at the very end of Latin literature, draws from the rosaries of Pastum a picture of beauty doomed to premature decline, "and watched the luxurious rose-beds all dewy in the young light of the rising dawn star." Roses bore away the palm from all the flowers during the sovereignty of Augustus and subsequent rulers; but Cicero did not approve of the custom of those who were given to luxurious entertainments of taking their meals reclining on rose leaves. Verres, a Roman Governor of Sicily, gave audiences with wreaths of roses around his neck and upon his head, sitting upon a cushion made of the finest Malta linen, full of sweet-scented rosebuds. Cleopatra and Nero extravagantly decorated their banqueting halls with rosy ornaments and garlands, and distinguished guests were greeted amid roseate bowers, while the merry dance went round in an atmosphere redolent with roseal odors. Every evidence exists that we must connect the rose with the love of antiquity, for the ancients preserved its luxury, and it was the ornament of their festivals, their altars and their tombs, while their poets made the rose the symbol of innocence and modesty, of grace and beauty. It is even probable that the Romans had roses of similar species with some of those we now cultivate, since they practiced sowing the seed, as well as propagated by cuttings, by budding and grafting. Hothouse growth was also understood and practiced, says Seneca, and it was a boast to have carried to perfection this flower, so far as to surpass the cultivators of Alexandria, Memphis and Rhodes. That the rose never tires is shown by its reputation through all ages. A hundred generations have passed attended by revolution of empires and desolating invasions, but time has not detracted from the loveliness of beauty's queen, nor has renewed associates made the rose less alluring.

Memory bears us up the stream of time, when we are to believe that the roses in the famous gardens of the East were as pure and constant as now, relics of Eden's bowers, "sweet nurslings of the vernal skies, bathed in soft airs." The same resistless beauty was doubtless manifest, flaunting in the shades of early morn; the same sunshine loved them then, because they were so fair; the same closing and fading of the petals was descried under the dropping of the gloaming dews. In their original clime, where the powers of admiration were never exhausted, the Syrian and Musk rose, replete with dewy wine, covered the sacred ground. No frost candied the grass, emblems of life continually existed, and roses glowed in gem-like tinges, hanging in cataracts from the gray walls of the fortified villages, topped by a crown of foliage. Amid such scenes the traveller exclaimed, in admiration, "Who can paint like nature?" as one beholds this shadowy curtain of gorgeous colors on mouldering stone-work, when the sun goes down behind the amethyst-tinted hills.

In summer time, in our favored locality, the admirer of the rose can find refreshment, rest and peace in this parterre, as he surveys with delight his favorite collection, whose brightness and sweetness bring tender memories, solaces and hopes; while the reflections awakened by floricultural nomenclature afford new sources for enjoyment. This companionship of distinguished acquaintances attired in rich apparel—the Counts and Duchesses, Princes and Barons, Queens and Empresses, Lords and Marquises, Ladys and Sirs, Madames and Mademoiselles, are a royal family grand and graceful when expanded to fullest beauty of flowers, purple, red and white, amidst rosebuds, blushing through their bowers of green, more lovely because more concealed. *Providence, R. I.*

EFFECT OF DROUTH ON PLANTS.

BY ERNEST WALKER.

Several weeks have passed since rain has fallen here; and all the time the July sun has been pouring down his rays most fiercely and unmercifully. At noon the mercury usually stands at something near 100°—and one day at 104°—in the shade.

The wilted foliage of trees and plants shows vegetation to be suffering: and seemingly, as if apprehensive that their end was near, flowering plants have been blooming with unwonted profusion and splendor, seeming to indicate that in case they were exterminated their object was to provide for a succeeding generation. Verbenas and Geraniums have assumed their richest hues and have been blooming in prodigal abundance.

Even the tardy Chrysanthemum, with similar apprehension, is flowering and covered with buds. The flowers are perfect, but the delicate petals, unable to bear the sun, are scorched and withered at the tips. The usually white ones have a lemonish tint. The flowers are evidently produced at the expense of growth and foliage. The jagged leaves of the blooming Chrysanthemum are changed to entire tri-lobate, and much smaller than usual, some being merely bracts; which with the numerous small and slender stems, bearing the flowers, greatly changes the characteristic appearance of the plant.

New Albany, Ind., July 22d, 1885.

[The very interesting topic touched on by our correspondent, has been worked up by modern scientific investigators, and the cause of coloring,

and indeed of flowering, found to be, as our correspondent suspects, in connection with a decrease of vegetative vigor; not until growth is checked are flowers formed of that which was intended for leaves, and with this check the color connected with flowers comes.

In like manner the check which autumn leaves receive results in coloring, and the same species of plants will have a brighter or higher color in a northern or Alpine region, where the struggle for life with the elements is greater than further south, where the elements are more favorable to vegetative vigor. The great development of color in Alpine plants over those which grow at low elevations is believed to be referable to this law. Color is an attribute of fading vegetation.—Ed. G. M.]

WILD FLOWERS OF ROCHESTER, N. Y., AS COMPARED WITH CALIFORNIA.

BY B.

Twice I have made a list of the species of wild plants found in a mile's walk—on one occasion from my residence, by way of street and canal-side, to Fair Grounds, on the edge of the town; on the other, going over ground some hundreds of feet removed from this, but still embracing a like amount of dry and wet soil. On each trip the number of species noted was either ninety-six or ninety-seven—the number overlooked being perhaps twenty or thirty.

In a walk of equal length—but including digressions laterally from 75 to 100 feet—along the edge of the river at Santa Cruz, Cal.—the ground being sandy, in parts quite damp and subject to overflow in spring—120 species were booked. The time in each case was from two to three hours.

Two or three short subsequent visits to the same ground along the San Lorenzo yielded me about thirty additional species, with perhaps as many as twenty-five to fifty species overlooked.

In corresponding localities, or situations, this proportion of wildlings for the two sections—the Pacific and Atlantic coasts—would probably hold good. *Rochester, N. Y.*

EDITORIAL NOTES.

THE CURL IN THE PEACH.—In the report of the Botanist to the New York agricultural experiment station (we shall soon have to have a reform in these long names, as well as in the names of fruits) Prof. Arthur says the "curl" in the peach leaf is caused by a small fungus, Exoascus deformans; and that "it is a common error to ascribe the attacks of fungous diseases to the influence of of the weather, not considering that each fungus has its appointed season of development the same as a higher plant."

"In fact there is no more reason to suppose that it is wholly a matter of temperature and moisture that causes the curl to ripen its spores, and complete its yearly growth before the heats of midsummer arrive, than that the same cause regulates the appearance of the peach blossoms. It is rather the hereditary habit which even the weather is rarely able to alter."

All who have watched the development of

Plum Bladders.

fungous plants must agree with Prof. Arthur to this extent, that these little plants cannot grow till the season of development has come; but on the other hand, they will not grow then, unless the conditions be favorable. A peach tree may have within its tissues the spores or mycelium of the curl fungus in a sort of hereditary condition, but it will not develop under a high temperature. We believe it to be conceded that no one ever saw a case of curl in a peach tree grown under glass. It is also very curious to note how the same fungus operates differently in different plants. The curl attacking the leaves of the peach, does not, we believe, infest the leaves of the plum, but will the plum fruit. We know of a tree of the American wild plum, Prunus Americana, that never bears a perfect fruit. They are nothing but hollow green bladders, as in the cut annexed.

As we understand, this result comes from the attack of precisely the same fungus as produces the curl in the leaf of the peach. It may be hereditary in this plant, for it always appears in this tree, at least we have known it five years in succession; and we have little doubt if grafts were taken from this tree to one free from the disease, branches from these grafts would contrive to produce plum bladders instead of plum fruit. We could give other instances proving the correctness of Prof. Arthur's position, that the curl fungus when it once gets possession of a tree, becomes an inseparable part of it through all subsequent propagation, though it may not develop into active life unless the climatal conditions are favorable.

SCRAPS AND QUERIES.

VARIATIONS AMONG PLANTS.—"B.," Leesburg, Fla., says: "I have found your articles on fertilization very interesting. Since I read about the fig in your magazine, I thought that since those fruits have been raised for so many years by means other than seeds, perhaps they do not require fertilizing at all. For instance, the ordinary banana down here, which I believe is properly the plantain, seems to set all its fruit as far as the plant is able to sustain them; but the cultivated banana is seedless because it has been divided for so long that the seeds have become abortive. I think perhaps the varieties of oranges which have abortive seeds may not require cross-fertilizing. Don't you think that in the case of the self-fertilized fig the fleshy part may form all right, but if the seeds were sown they would prove deficient in vitality? Some numbers back you told me about bud variation, and that you considered that from a fertilizing point of view it made distinct individuals. That I can quite believe, but bud variation was known in Darwin's time, as Rose Isabella Sprunt and some chrysanthemums, were known in his time; but then I suppose Darwin considered floriculture a morbid taste for monstrosities and perhaps overlooked it. I am afraid I am rather one of those persons who "want to know you know;" but don't you think the case where two black grapes were crossed and produced a white one, one of their ancestors was a white one, just as in the case in human beings where some one has a faint "dash of de tar brush" one of their children may have the features of a negro? or do you think that in some cases by crossing two plants much alike you might get the opposite? for I know that canary breeders never pair two crested ones because they are apt to turn out bald."

[Any questions from correspondents are welcome, as none of us know all we want to learn, and even the Editor is indebted to correspondents for suggestions leading to investigations that might not otherwise be undertaken. In the present case it may be remarked that there is no necessity for looking back to ancestry to account for the appearance of variations. If there were but one or a single pair of parents in each case, the variations we see must be wholly new and not reversions. If there were originally but one apple, some of the forms or colors that have since been introduced must be wholly new creations. So with seedless fruits. There are seedless apples, pears, persimmons and other fruits well-known to have sprung at once into existence, and with no relation to continual propagation as in the case of the banana.

In the case of the fig, we are not so sure that the seeds are as defective as they are generally supposed to be. In these matters very few people examine for themselves. Even with a fig before them it is more than likely it would not be touched, but some book be looked up to find out what somebody said ages ago. We have now in sight of our window a young fig tree that came up in some kitchen waste and could only have sprung from seed of a dried fig. It is not likely this was the only perfect seed. It is a well-known axiom in natural seed sowing that there are hundreds of perfect seeds produced for every one that in the struggle for life ever gets to be a plant.—ED. G. M.]

ODOR IN CEREUS GRANDIFLORUS.—"A. G.:" We are indebted to our valued correspondent for the following note: "The Editor of GARDENERS' MONTHLY, on p. 235, has forgotten the old and long-recorded fact that the fragrance of Cereus grandiflorus is intermittent—comes as it were in puffs, at intervals."

TOBACCO CHANGING TO PETUNIAS.—"C. H.," Pembroke, Genesee Co., N. Y., writes: "I sowed this spring on a hot-bed three varieties of tobacco—Conn. Seed Leaf, Hayne's and Wilson. It came up well, and what seems strange to me, there is not one plant of tobacco in the lot. They are all petunias and now in bloom. Of the white variety there can be no mistake about the seed, as I grew and saved the seed myself. Can you account for

the change? Did you ever know of the like? or is it a common thing, though it may seem so very strange to me? You may say that I must be wrong about the seed, but there is positively no mistake, in the seed or otherwise. I would be glad of an explanation."

[The genus to which tobacco belongs, Nicotiana, is very closely allied to Petunia—indeed some Petunias were once referred to Nicotiana by some good botanists. Still, the change in the wholesale way described by our correspondent is so very unlikely, that, notwithstanding his certainty that there has been no mistake, we should advise him to try it again. Sow some of the petunia seed and see if it go back to tobacco; and sow some tobacco and note if it changes toward petunia. If there be no mistake about the wholesale change this season, there will surely be some tendency that way next year.—Ed. G. M.]

FERTILE JAPAN YAM.—Mr. Wm. Muir, Fox Creek, St. Louis Co., Missouri, writes: "I enclose portion of vine of Dioscorea Batatas, with seed vessels and bulblets. I have cultivated the Dioscorea Batatas since about 1858, and occasionally noticed a vine thus to 'sport.' Believing that it is thought that we have only the 'male plant' in this country, the tendency to variation is curious. I have tried to vegetate the capsules, but something always interfered; still I hope to have some so perfect as to vegetate."

[Thanks for the specimen—we have never seen a fertile one before. The change of sex as it is commonly called—that is to say, the appearance of male or female flowers on plants wholly of the opposite sex—is not of unfrequent occurrence, though over a quarter of a century ago, when the change of sex in the strawberry was before the public, it was as much as people could do to give credit to the fact, even when so able a botanist as Dr. Wm. Darlington had to tell the Cincinnati Horticultural Society he had some reason for believing it. It only requires an occasional glance at some of these old issues to discover that the world of intelligence does move.—Ed. G. M.]

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

OUR LADY'S GARDEN.

BY R. A. OAKES.

II.

Virgin's pinch is so called because Our Lady left the impress of her fingers upon it; the rosemary flowers, in joy at the Passion of our Lord, because she spread the infant's linen over it to dry. Broom and chickweed are compelled forever to rustle, because, in her flight with the infant Jesus, they betrayed her to the soldiers of Herod; and she was rescued by the juniper opening its arms and concealing her; and, in honor of this act, the Italians even now use the latter to decorate their stalls at Christmas-tide. The Polypodium vulgare is said to have sprung from the Virgin's milk. The purple flowering lady's thistle had its leaves beautifully diversified from the same source. She blessed the sage, and it was call officinalis Christi. The little star-flower, known as Our Lady's bedstraw, has its romantic legend. When the different plants were summoned to form a couch for the Mother and Child in the stable, they all made various excuses, until this modest flower offered itself, and was rewarded by having its snowy petals turned to gold. The Magyars believe that every kernel of wheat needs only to be split in the center to disclose the impress of the Virgin and Child.

The flowers that in classic mythology and Scandinavian folk lore blossomed for Venus and Holda, under monkish direction, were transferred to the Virgin. The rose was sacred to the northern maternal goddess; she was affectionately termed Frau Rose and Mutter Rose; but when the Virgin Mother usurped her place she became Marienroschen. Holda blessed and guarded the flax; but to the German maiden of to-day it is Unser Frauen Flacks; to the French peasant, lin de Notre Dame. So Freyja-jargrass became lady's tresses, and Niörd's glove (Spongia marina) lady's hand. The maiden hair fern, sacred to Venus, became Mariengrass; the Matricaria parthenium, devoted to Minerva, the herb of the blessed Mary.

The clematis, from its "shady covertures in the garden" was called lady's bower; the clustering blossoms of the pink thrift, lady's cushion; the primula, lady's candlestick; the Scandix pecten, lady's comb; striped grass, lady's garters; quaking grass, lady's hair; white-flowered wormwood, lady's smoke; Campanula hybrida, lady's looking-glass; hare bell, lady's thimble; Cypripedium, lady's slipper; the fuchsia, lady's eardrop; dodder, lady's laces; briony, lady's seal; Alchemilla vulgaris, lady's mantle; the glistening drops that sparkle on the sundew and the lily of the valley, lady's tears. In fact, all flowers are dedicated to Our Lady, but pre-eminently those bearing any fancied resemblance to the human body.

In France, the beautiful veronica is called les yeux de la bonne Vierge; the spearmint, menthe de Notre Dame; the Italians calling it erba santa Maria; the Germans, Frauenmünze. With the latter, campanula is Marienglockchen; costmary, Frauenbalsam. In Tuscany a little plant, with tiny flowerets of whitish rose color, is known as Madonna's herb, and on Ascension Day, when plucked and hung on the walls, will frequently flower, when it is regarded as a special manifestation of Our Lady's pleasure.

Among the fruits, the cherry is dedicated to the Virgin. The legend tells us that Mary longed for some of the fruit, and when Joseph, in answer to her request, told her to call upon the father of her child, the branch immediately bent within her reach. The strawberry, once Holda's, is sacred to the Virgin. In the Tyrol they have a folk tale of a boy and girl picking strawberries, when the Virgin, clad in shining raiment, appeared to them. The little girl rose respectfully, but the boy, true to his Gargantuan instincts, kept feeding on the luscious fruit. The Virgin gave each a golden box. From the girl's there flew an angel, who bore her up to Heaven, while two great black worms came from the boy's, bearing him away into the black forest.

The rose of Jericho is the rose of the Madonna, the Arab designating it Kaf Maryam—Mary's hand. The early pilgrims to the Holy Sepulcher asserted that, wherever Mary and Joseph rested in their flight, this rose sprang into bloom. It was thought to ease the pains of parturition by its very presence; and not only in the East, but in Italy and Germany, women placed it by their bedsides. Sir Thomas Browne, in his "Pseudodoxia Epidemica," gives some very curious information regarding this flower.

Many of Our Lady's feast days have particular flowers consecrated to them. At the purification, February 2d, the snowdrop takes the place of her image on the altar, and in her honor is called the fair maid of February. There is a charming folk tale connected with this flower. When Eve, expelled from Paradise, roamed, broken-hearted, over the barren earth, and the snow fell cold and silently, an angel breathed upon a downy flake, and bade it bud and bloom. Before it touched the ground, Eve saw it, and her heart grew light, and she loved it better than all the brightest blossoms of Eden. Then, as the angel vanished with the assurance that this flower should ever remain the harbinger of sun and summer, where his feet had touched rings of snow-drops formed.

To the Annunciation, March 25th, belong the marigold, almond and narcissus. It is said that the Virgin always wore the marigold on her bosom, and that it blossomed at all the feasts held in her honor. The French peasants think that if it be touched on Annunciation day by the bare foot of one whose heart is pure it will impart a knowledge of the language of birds. A branch of the almond formed the miraculous rod of Aaron, that budded, flowered, and fruited in the temple; while the narcissus, the daffodil of which Rob Herrick sings so enchantingly, holds an honored place in myth and song. Lady's smock, the chemise de Notre Dame of the French, becomes "all silver white" on this feast day. Its little flowers resemble dainty smocks spread out on the deepening verdure of the spring meadows to bleach. It is called the cuckoo flower, because, as old Gerard tells us, "it flowers when the cuckoo doth begin to sing her pleasant song without stammering." At the feast of the Nativity the Virgin's altars are decked with the amellus, long used in the worship of Roman divinities, while at the feast of the Immaculate Conception, December 8th, the arbor vitæ, type of immortality, holds conspicuous place.—*Independent.*

GOOBER AND PINDAR.

BY H. W. RAVENEL.

In regard to the article in July number GARDENERS' MONTHLY, page 216, on "Origin of the name Goober for the Pea nut," I will state that among the negroes in the coast region of South Carolina, the name "Goober" or "Goober Pea" is applied exclusively to the Voandzea, whilst "Pindar" or "Pindah" is always given to the well-known Pea nut, Arachis.

These two plants have the similar habits of

blooming above ground, but ripening their fruit beneath the surface. The former is an oval, one-sided legume. The seed is hard and requires boiling before it can be eaten, and is not used parched like the Pea nut. It is not as rich nor as palatable as the Pea nut.

The Goober Pea, or Voandzea, was cultivated very commonly by them 50 or 60 years ago, but it is now very rarely seen. Other and better varieties of Beans and Peas have taken its place.

I have always been under the impression that these two vegetable productions were brought over to this country by the Africans and, under their different names, have been cultivated by their descendants here. *Aiken, South Carolina.*

WHERE FLORISTS SHOULD LOCATE.

BY R. C. POPPEY.

This question many florists ask themselves, and with but few exceptions, I dare say, all imagine that, in order to be successful they must locate as closely to a metropolis as possible, regardless of the fact that already too many are huddled there, battling with the law that allows only the fittest to exist. On my arrival to this city, Elmira, New York, I wondered how it had escaped the eye of so many practical florists, who have settled in localities where they eke out a miserable existence. I know of no place where more money is so liberally expended for plants, and especially cut flowers as is here. For funeral purposes it is scarcely equaled in a city double its size. Not alone is Elmira to be considered, but also the lively little villages that surround it. A practical florist would find no opposition, from the fact that no flowers worth speaking of are raised here. I know florists in the eastern part of this state who are tasty in making up flowers, but are wholly dependent upon shipping to New York City, that would find it more profitable to open a neat store here. I am a practical florist myself and therefore know what I am saying. I have no mercenary motives for this communication, and if the GARDENERS' MONTHLY does not consider it out of order, I would willingly give further information through its columns or by letter.

415 Walnut St., Elmira, N. Y.

[The Editor has to distinguish between that which is wholly personal, and that which is of interest to a very large circle of readers,—the latter only being the guide as to what should have a place in the magazine. In the present case Mr. Poppey has no personal interest in this matter, and is actuated solely by a desire to benefit somebody. Still, it is a matter of individual interest that perhaps ought to come under the head of "declined;" but in view of the fact that the note calls attention to a point of very general interest, and a correct point as we believe,—that there is a vast field in growing towns for people to build up business instead of crowding into the already overdone cities, we cheerfully give place to the communication.—Ed. G. M.]

EDITORIAL NOTES.

LAWSON OR COMET PEAR.—We note that some question is still raised as to our decision in this matter. If wrong we shall be glad to be set right, for we can have no personal interest in the decision one way or another. We are simply asked to decide an unpleasant controversy, and have endeavored to perform the unpleasant duty. The rules of the American Pomological Society say—

1. The originator or introducer (in the order named) has the prior right to bestow a name upon a new or unnamed fruit, and—

4. Should the question of priority arise between different names for the same variety of fruit. other circumstances being equal, the name first publicly bestowed will be given the preference.

Under rule 4, if a variety be found of which no one knew the origin, introducer, or owner, and thus several persons named differently the one thing, the first name given would be adopted. In this instance if no one knew where the pear was owned or by whom introduced, Comet would be justifiable as the first name published. But here the "circumstances are not equal" for the Lawsons were known to own the Pear, and first introduced it to Mr. Caywood and others; and, so far as we understand the English language, have the prior right to bestow a name. We cannot see that the fact that Mr. Caywood did not think proper to consult the owner, who introduced the grafts to him, as to what name it should bear, stands in the least in the way of the owner's right to name it under the rules adopted by the American Pomological Society.

If any one can show that this decision is wrong we shall very cheerfully recede from it, having, as already said, no reason for any prejudice in favor of any name.

HISTORY OF THE LECONTE PEAR.—When the average literary man—the literary magazine man—gets off his horse, he is very apt to carry his poet's license along with him. We rarely find one who can give any historical fact correctly. Joaquin Miller, the "Poet of the Sierras," has been writing letters from Florida, and fills up his columns with the following account of the Leconte Pear:—

"This new, sandy land cannot be very rich, it seems to me. Yet the people tell me it is amazingly productive. They showed me a pear-tree, yesterday, as we drove down the old Ponce de Leon trail, that, last year, brought the owner $148. This is a Leconte pear-tree, and is only eight years old. The fruit ripens in July, and is bought by New York dealers as it grows on the tree at the fabulous price of four dollars per bushel. This tree is a production of this latitude, and is a revelation. The parent tree is still standing. The fruit was discovered and developed by a French gardener, whose name it bears. Many new comers from the North are now clearing off and planting land with this remarkable Leconte Pear. In a year or two the shores of this Fountain of Youth will be blossoming with the discovery of the French gardener."

Our readers need not be told that the Leconte Pear is not a native of Florida, and that the original tree is not still standing in Florida, nor was it "discovered and developed," whatever that may mean, by any French gardener, and the man "whose name it bears" was not a Frenchman, though his ancestors were. In fact the only "revelation" Miller has had in the matter is a mere guess at the whole thing because "le conte" happens to be French. Possibly a tree eight years old from the graft might produce thirty-seven bushels of Pears, but if the price is "fabulous," the measure may be so also.

DOWNING'S FRUITS AND FRUIT-TREES OF AMERICA.—Mr. Charles Downing told Mr. Green of the *Fruit Grower*, that he never had any pecuniary interest in this work. The copyright belongs to Mrs. A. J. Menell, who was formerly Mrs. Andrew Jackson Downing.

HARD-WORKING EDITORS.—The London *Gardeners' Magazine* has the following: "Editors make a poor figure in the affairs of the National Rose Society. There were four in the last list of the general committee, and not one of them attended a single meeting throughout the year. It is a folly to appoint editors to offices they have not shown a desire to fill. Perhaps they would do many of the things that are required or expected of them could they be provided with more than twenty-four hours in a day, and occasionally a few extra heads, arms, legs, and digestive machinery."

We make room for this paragraph, because it has been the experience of the present writer. It is a compliment he highly appreciates, to be asked to write scores of essays, give innumerable addresses, visit innumerable pretty places, and serve on countless committees for all sorts of things. But the truth must be told, which is, that an Editor cannot do any of these things.

PROF. J. G. LEMMON.—Prof. J. G. Lemmon and wife, both excellent botanists and explorers, well known to our readers, by the many beautiful flowers they have discovered in their wanderings, passed through Philadelphia in the first week in August, on a short visit to the "old home" in the East before making another plant-hunting journey next year.

MR. EDGAR SANDERS.—This well-known and esteemed florist of Chicago, according to the *Prairie Farmer*, which gives an excellent likeness of him, was born October 1st, 1827, at East Grimstead, Sussex, in England. There he was educated to the gardening profession, when in 1853 with his wife he landed in New York. Within a few weeks after we find him laying out a suburban garden at Albany, and subsequently at several temporary engagements, till he entered with Mr. Rathbone at Albany, and remained four years. With a small capital he located in Chicago in 1857. There was but one small commercial greenhouse when he started, so that he may be said to be the father of the florists in Chicago. He retired from the business four years ago, giving to horticultural literature the whole of the time, of which it has always had a very useful part. His earlier writings in this country were dated from Mr. Rathbone's and contributed to the Philadelphia *Florist*.

ANDREW MCNAIR DRYBURGH.—Some thirty years ago, when the fame of the florists of Philadelphia and the exhibitions of the Pennsylvania Society filled the land, the name of Andrew M. Dryburgh was a very common one among the successful exhibitors. Like many others of note he came to Philadelphia, a well-educated gardener, with plenty of knowledge and enthusiasm for his business, but with little cash. By saving and industry he accumulated enough to start business, and eventually purchased a half block of ground near Logan Square. He was one of the first to start the business of cut flower growing in Philadelphia, and made a specialty especially of camellias. At this period they were in great demand, and all that flowered before New Year brought readily $20 per 100. Mr. Dryburgh had the oldest and largest plants in the city and knew how to advance the flower, hence his camellia in-

come was considered by his fellow florists to be enormous. In cut flower work he had the run of the best custom work, being fortunate in a first-class helper in this in his excellent wife. Anxious to retire from the business he some twenty years ago sold the ground for a handsome figure to the Academy of Natural Sciences, and his grand old camellias were sold and the collection dispersed. Since that time he has sunk so completely out of sight in his retirement, that it was only by a paragraph in the morning paper that we knew of his decease last month, and had to inquire of some of the few old fellows still living to be sure of the identity of the good old man. He came to Philadelphia originally from Scotland, and was in his 74th year at his decease.

CHARLES WRIGHT.—As we go to press the telegraph announces the death of this eminent botanist, which occurred on his farm at Weathersfield, Connecticut, on the 11th of August, in his seventy-fourth year. He was found dead in his barn. Mr. Wright was one of the earliest of what might be termed the modern race of enthusiastic collectors along our Mexican borders, who have done so much to make the flora of that section known to us. His name must be familiar to nearly all plant-lovers in some one plant or another that has been named for him. As we pen these remarks two pretty things—Pavonia Wrightii and Scutellaria Wrightii—are blooming before us, mementoes of the earnest labors amidst difficulties and danger modern explorers are mostly exempt from, but which beset the early wanderers over our continent. Since "our time," Mr. Wright has been somewhat retired, and the writer never had the pleasure but of one brief introduction to him. But we shall no doubt have a full tribute to his life and eminent services from his co-laborers at Cambridge in due season.

THE ELM LEAF BEETLE.—The Entomological division of the Department of Agriculture has issued a full account of this destructive creature. All that is known of its history or means for its destruction are fully stated.

AMERICAN FRUIT CULTURIST.—By J. J. Thomas. New Edition. New York: William Wood & Co. 1885.

If the demand for a work is a proof of its value, we have the test here, for this has been through so many since about 1850, we believe, since the first one appeared that we have lost the exact record. Besides the cultural directions, which from the pen of so practical an author as Mr. Thomas must have a more than ordinary value, the descriptions of fruits have been brought under better systems of classifications which make it easier than before to find out the name of an unknown fruit. But even yet this will be no easy task. The full descriptions of the best fruits are given in the body of the work, and the mere names of these with the brief descriptions of those that are not regarded as best, occupy 84 pages of the index.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—We are indebted to the able Secretary of the Massachusetts Horticultural Society, Mr. Robt. Manning, for the transactions for the past year. They have been for some time on our table waiting this acknowledgment. The essays and discussions at the monthly meetings are given in full. A copy of this work makes membership in this Society a great privilege.

REPORT OF PROF. J. C. ARTHUR, BOTANIST TO THE NEW YORK AGRICULTURAL STATION, 1884.—Even to this day there are excellent horticulturists who doubt whether small microscopic organisms in the vegetable kingdom are capable of originating disease in plants. They believe they always follow disease. To these, such a report as this will be welcome if they have any desire to learn how far they may be wrong. Mr. Arthur shows that, when persons talk of fungi they refer to as many forms of vegetable beings as they would if discoursing of the higher grades of flowering plants. There are thousands of them, and just as there are parasites among higher plants and plants that feed parasites,—so there are funguses that will injure other plants, and funguses that are no harm at all. The gray color, familiar to all who know lilac bushes, and called lilac-mildew, comes from a small fungus known as Microsphæria Friesii,—it does not injure a lilac bush; but the potato fungus, Perenospora infestans, undoubtedly kills its host. So with remedies. Though sulphur is a foe to many kinds of these lower forms it is quite likely some one would find a fungus that would grow and wax fat on a block of sulphnr.

In this paper, Prof. Arthur studies the fungous diseases of the apple, pear, quince, peach, tomato, oats, clematis, and Canada thistle. He goes over again the work of Prof. Burrill, in regard to Bacteria causing Fire-blight in the pear, with results confirming them. The great difficulty we find in following Prof. Arthur in his details is the uncertainty whether we all understand the same thing by the same terms. He considers Twig-blight and Fire-blight as synonymous, yet, what most fruit culturists know as twig-blight is certainly the work of an insect, and the two terms would not be generally regarded as synonyms. This confusion then naturally results in the question, do these gentlemen mean the same thing by Fire-blight as we do? Prof. Arthur's idea is that the chief characteristic is the blackening of the branches and foliage, usually accompanied with a peculiar putrefactive odor. But there are several troubles that are characterized in this way that are certainly not due to the causes that produce what most fruit growers know as Fire-blight. There is a sudden blackening of the leaves that seldom reaches even the petioles, very common among pear-trees about midsummer; and there is a blackening of the leaves and young stems soon after they push in spring, and which the old folks, for want of better knowledge, called "Frozen-sap blight," which, no doubt, of fungus origin, is not Fire-blight. And then we know that the true Fire-blight starts at some fixed spot on a branch, killing the tissue only for a few inches, and that it is only when the branch is literally girdled for these few inches, thus stopping the upward flow of the sap, that the upper leaves turn black, presumably for want of food. Yet, as we understand it, bacteria are found in these black leaves, as they are in all decaying substances, and we have not been able in our minds to connect the bacterium introduced into a four or five year old branch by inoculation, and which may girdle it, with the bacterium found in the dying leaves, because there is so much bark tissue uninjured between the dying leaves and the small spot where the enemy's attack was made.

Again, Prof. Arthur regards the "Apple-blight" and Pear (Fire) blight as identical in origin. But there are so many forms of "blight" in the apple, that must have different originations, that we again wonder whether the author and reader can possibly mean the same thing. There is one kind that seems to start early in the spring by eating away both wood and bark, getting deeper and wider each year, but only once in a while extending wholly round the stem. It may work for several years before it gets completely round, but when it does the whole foliage above blackens and dies—not quite—but nearly as suddenly as in the usually recognized "Fire-blight." Another form seems to delight in operating at the point of junction with a branchlet and branch. In this case a tree often presents the peculiarity of nearly all the smaller branchlets in the interior of the tree with browned or blackened leaves. When the leading branches die we have rarely seen more than the growth of the last year suffer; we do not know that we ever saw an aged branch, or a whole tree, go off "in a night" as we find in the pear-tree they often do.

These different experiences lead one to doubt whether the author and the reader have the same ideas when the same terms are used; and we believe it is because this uncertainty very frequently arises that the conviction which the authors of such treatises as this hope to carry to the reader's mind, fail to have the desired effect.

THE AMERICAN FLORISTS.—The American Florists had a good time at Cincinnati. There were some four hundred in attendance, Philadelphia having much the largest delegation present outside of the place of meeting. Twenty-one Philadelphians were present, New York coming next with sixteen. The papers were of a high order of excellence. President John Thorpe dwelt chiefly on the reasons for the society's existence. 24,000,000 cut roses were sold last year; carnation flowers he thought would reach 125,000,000; $200,000 represent about the amount paid the Dutch last year for hyacinths and tulips; 700 people are supposed to be engaged in selling florists' supplies, and there are probably 2000 cut flower sellers. Florists have grown four-fold in ten years. Catalogues have increased five-fold—these make trade for those who do not catalogue. Florists are the most generous of human beings. Few people give so much of their ware to public institutions as florists. Still, it was a generosity that paid by the increase of floral taste. There were 2,000 first-class gardeners in the United States, and thousands of amateurs without professional help. The address was well received.

The Rose essay of John May was an exhaustive treatise, and one of the best features of the convention. The tea rose was the most important to the cut flower grower. Cuttings are put in in January. In about six weeks they are shifted to four-inch pots; in four or five weeks shift to 6s or 7s. About the end of June they are planted in shallow benches. Manure water is not given till February. Mildew is cured by sulphur and linseed oil or milk, painted on the pipes. Green fly is banished by tobacco stems on the floor of the house. Hybrid perpetuals do best flowered wholly in pots. Dried off about 1st of August, if wanted by Christmas, starting growth about middle of September. Mr. May concluded his admirable essay by some encouraging thoughts about raising seedling roses. Craig, of Philadelphia, Henderson, of Flushing,

Taylor, of Long Island, Hill, of Richmond, Thorpe, of Queens, Hendricks, of Albany, Benner, of Xenia, and Jordan, of St. Louis, discussed the essay.

Michel, of St. Louis, discussed good cut flower plants for spring and summer, naming particularly Freesia refracta alba.

Hot water and steam took up a whole afternoon and evening. A large number of delegates participated in the discussion, and it was remarkable how much was said in favor of both methods.

The third day found a good time in a reception by Mayor Probasco at his beautiful residence at Clifton. This beauty spot will never be forgotten by those who participated. Philadelphia was selected as the place of meeting for next year. A new bi-monthly magazine, in the interest of the trade, published in Chicago, was circulated at the meeting, and was warmly received as likely to be of great service to flower growing and flower growers. It is called the *American Florist*, and seems to have in this first number the elements of complete success.

SCRAPS AND QUERIES.

MAURANDYA BARCLAYANA. — "Alexa" says: "Can you tell me the history of a plant I greatly admire, and which is known in gardens as the Barclayana Vine? I have looked through Mr. Henderson's Handbook of Plants, which, by the way, I highly value, without finding anything about it, which omission seems remarkable in a plant so common and so beautiful."

[Its proper name is Maurandya Barclayana, and it will be found in Henderson under this name. We do not know why it is that flower lovers have dropped the name of the genus for that of the species in this case. It looks like a determined effort on the part of flower lovers to ignore the honor to a lady which this pretty Mexican genus was intended to establish. The author of the name, Ortega, says it is for "Donna Catherina Pancratia Maurandy, wife of Don Augustin Juan, Professor in the Royal Botanic Garden of Carthagena—a learned lady, a sharer, if not indeed a leader in her husband's botanical labors." But all our text books give the honor to "Dr. Maurandy, Professor of Botany in Carthagena." It is remarkable that after the botanists should have dropped the lady, ladies themselves, whom we supposed started "Barclayana Vine," should have also given to a man the honor intended for the Professor's wife.—Ed. G.M.]

LILY OF THE VALLEY.—A correspondent informs us that in the farming districts of Pennsylvania, about Reading, the common people universally call Pyrola rotundifolia, one of the winter greens, Wild Lily of the Valley.

OLD OLIVE GROVES IN FLORIDA.—A Doylestown, Pa., correspondent writes: "About three years ago I wrote asking thee the name of a grove of exceedingly crooked, twisted, gnarled trees, at the mouth of the St. Johns, Florida. After persistent inquiry it turned out to be an Olive grove, planted, I doubt not, by early settlers of that part of our coast. It seems there is another Olive grove on an island (Sullivan's) on the coast of Georgia. All the name we could get for these trees when there, was, the 'Devil-tree.'"

QUEER NAMES.—A correspondent says: "It is amusing how plants get queer names. 'Joseph on the palings' for Josephine de Malines Pear, reminds me of a joke of a similar kind. Recently a lady friend going through my garden asked a name which I told her was a kind of Lythrum. I was surprised some days afterward to be told that the 'Bed-room' plant I had called her attention to, was certainly a beautiful thing. She wished me to note by this reference that she had remembered the name."

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

DUTCH PRIZES FOR AMERICAN EXHIBITIONS.

BY J. H. KRELAAGE.

The General Union for the Cultivation of Bulbs, under the patronage of the King of the Netherlands, at Haarlem, Holland, has in view to promote by all proper means, the love for flowers in general, and in particular the growing, and consequently the trade in flower roots; and to this end offer to the leading horticultural societies of the United States, out of their funds. prizes for hyacinths in bloom at the spring exhibitions of 1886. These offers have been accepted with thanks by the Pennsylvania Horticultural Society at Philadelphia, and by the Massachusetts Horticultural Society at Boston.

For the spring shows of 1886, of either of these two societies, at Philadelphia and Boston, there will be offered by the Federative General Union abovenamed prizes for 50 hyacinths grown in pots in 50 varieties, to be competed for by nurserymen, seedsmen and florists dealing in these articles. The prizes will consist of medals, engraved with the official stamp of the Union. As first prize, a gold medal; as second prize, a silver gilt medal; and as third prize, a silver medal. If it is proved that there is some success by this offering, it is the intention of the General Union to offer a following year again prizes for hyacinths, and perhaps too for tulips, narcissus and other articles of the Dutch bulb trade at various exhibitions in the U. S.

When is considered the small importations of flower-roots to the United States—a country so very powerful in wealth and increasing in civilization—in comparison to what England, Germany, and other countries employ, it seems that an advancement and extension of the love for flower roots must be desirable to all who appreciate the enjoyment of winter gardening and blooming of these beautiful flowers. *Haarlem, Holland.*

INTERNATIONAL EXPOSITION AT ANTWERP, BELGIUM.

BY M. H. LESTER.

It took just thirteen days per S. S. Penland from the foot of Grand St., Jersey City, to see the Exposition. I thought I would just take a race across and see some plants that would be new to me; but in this I am mistaken. However, I am glad I came, as it gives one an idea of how things are done in other places than America. There is a good sized park near the centre of the city, in which American trees and plants are well represented.

The Exposition grounds, although not near so large as at New Orleans, are in much better condition. It is a long time since I had the opportunity to see Roses and Geraniums in such condition at this time of the year; and Carnations look almost as good as they did when I was a boy. I find some very pretty effects in carpet-bedding, but no better nor as good as some I have seen at Fairmount Park, and other public and private places in the United States. I believe an attempt has been made of late to cry down this class of work; but I do not see why a man with a taste for it should not be allowed to indulge in it. It is not every man can make a success of it by any means.

There are two collections of Conifers in the grounds, of which Auracarias and Japanese Cypress—Retinospora—in varieties, form the major portion. Acer Negundo—sometimes called Box-elder—is used very freely here in a dwarf state. I marvel when I see Geraniums, Gladiolus, Mignonette, Lobelia, Stocks, French Marigold, and several other things look so fresh and healthy, when mine were all done a month before I left New Orleans; but so they ought! I have not seen a thermometer above 60° since I have been here, and when I hear folks complaining of the heat it makes me turn away for politeness, and smile.

Rhododendrons and Azaleas must have been a sight here earlier. I do not see what in the world they grow so many Laurus nobilis in tubs for, all shaved into a sugar-loaf shape, 7 and 8 feet high, with 2 and 3 feet of bare stem above the tub. If any one sees any beauty in them, I should like to know where it comes in. The inside Horticultural Department appears to have been divided off from one of the series of buildings occupied by the Exposition proper, by a partition and green baize cloth. The roof is partially glass, shaded with curtains, and from which the public are rigorously excluded. But to-day the jury pass their verdict on the different exhibits, and I see by the papers that the Horticultural Department will be open to the public to-morrow, when we shall see what we shall see.

I made several unsuccessful attempts to get in to-day. I think it must have been my lack of fluency in the Flemish language "as yet," or want of the insignia of a juror. At all events I talked American English to that fellow at the door, at one time for three-quarters of an hour at a stretch, and when I paused for breath he only turned his back on me and closed the door the tighter. I pitied that poor benighted creature, I did!

Antwerp, Belgium.

THE CACTUSES AT NEW ORLEANS.

We have the following letter on this subject: "In your July number I find under 'Editorial Notes,' a quotation from a letter written you, in regard to the rare Astrophytum myriostigma. As I had an exhibit of cacti at the New Orleans Exposition, and having had a lady come to me and inquire for the identical one you mention, wanting with it another rare cactus, offering for both 75 cents—I had but one of the two, and would not take 75 cents for the one—I suggested to her to take two other varieties to the value of 75 cents, telling her at the same time what she was getting.

She was buying for another party. Should your correspondent refer to this, he simply erred in his statement to you. I had no Aloe longiaristata. I would further like to state, in justice to the judges, that I was awarded four premiums and two recommended, and that they were awarded according to the premium regulations.

"I should think that, as the Editor of the GARDENERS' MONTHLY, and particularly as you want to express an opinion on the management of the Horticultural Hall, you should inform yourself about all the particulars, as everything is recorded and open to inspection.

"I write this explanation in justice to the jury and myself as regards my exhibit.

"Very Respectfully, J. H. ERKENER."

[Our correspondent is rather tart in the last paragraph but one, when he comments on the duty of an Editor to "inform himself about all the particulars." It is evident that he himself though on hand where "everything is recorded and open to inspection," has not been able to get at the exact facts any better than the Editor. Turning to the July number we find that a lady knowing that a friend wanted an Astrophytum myriostigma, bought one for this plant, which turned out to be something else. Now the present correspondent writes to us that a lady asked him for a plant of this kind, but he sold her something else, which she knew on buying was something else.

Therefore this latter lady cannot possibly be the same person as the first lady. It would be too absurd to buy and send to another a plant he did not want, under the impression that it would suit him just as well as the one he did want, and knowing that he would see it was not the one he wanted.

Surely even an Editor may be pardoned if he finds it difficult to pursue information properly with this illustration before him.—Ed. G. M.]

EDITORIAL NOTES.

AMERICAN POMOLOGICAL SOCIETY.—By the time some of our readers get this, this body will be in session at Grand Rapids, Mich., opening on the 9th, and continuing three days. We give the following programme so that those who cannot get there may note what a good time their more fortunate brothers and sisters are having:

Discussion of new fruits, Apples, Pears, Peaches, etc., etc. W. C. Barry of N. Y., T. S. Hubbard of N. Y., W. C. Strong of Mass.

Proper Nomenclature of Fruits. J. J. Thomas of N. Y.; P. Barry of N. Y., T. T. Lyon of Mich., Robert Manning of Mass.

Nomenclature of Russian Apples. Chas. Gibb of Quebec.

The Strawberry. F. M. Hexamer of N. Y.

The causes that produce colors in fruits and their design in nature. Jos. H. Bourn of R. I.

Influence of Pollen on the size, form, color, and flavor of fruits. C. M. Hovey of Mass., A. S. Fuller of N. J., Prof. W. R. Lazenby of Ohio, W. Crawford of Ohio.

American Grapes. T. V. Munson of Texas, J. B. Moore of Mass., G. W. Campbell of Ohio.

Small Fruits. Granville Cowing of Ind., C. A. Green of N. Y., E. Williams of N. J.

Fruits of the Northeast. Dr. T. S. Hoskins of Vt.

Fruits of the North. D. W. Beadle of Ontario.

Fruits of the Northwest. Peter M. Gideon of Minn., Prof. J. L. Budd of Iowa.

Fruits of the South. P. J. Berckmans of Georgia, T. V. Munson of Texas, John Saul of District of Columbia.

Fruits of the Pacific Slope. Dr. J. Strentzel of California.

Lessons from the World's Exposition. L. A. Goodman of Mo., T. T. Lyon of Mich.

Relative value of Fruits for Canning and Drying in comparison with those for Dessert and Market. Josiah Hoopes of Penn.

Insects injurious to Fruits, and Remedies. Prof. Wm. Saunders of Ontario, Prof. C. V. Riley of District of Columbia, Prof. W. R. Lazenby of Ohio.

Recent experiments with injurious fungi or diseases of plants, with remedies. Prof. T. J. Burrill of Illinois, Prof. J. C. Arthur of New York, Dr. C. E. Bessey of Nebraska.

Distant shipment of Fruits, packing, and other arrangements to secure success and profit. Parker Earle of Illinois, G. C. Brackett of Kansas.

The best latitude for leading varieties of Apples for marketing. W. H. Ragan of Ind., C. E. Brown of N. S.

The best methods for preventing or protection from frost. Prof. W. R. Lazenby of Ohio, F. K. Phœnix of Wis.

The best methods of exhibiting fruits. R. W. Furnas of Neb., Prof. S. Tracy of Mo.

Needs and methods for gathering fruit statistics. Hon. W. I Chamberlain of Ohio.

Methods of conducting State and Local Horticultural Societies. Geo. Elwanger of N. Y., L. B. Pierce of Ohio.

Hard problems in Pomology, with hints looking towards improvements. J. J. Thomas of N. Y., Prof. J. L. Budd of Iowa, Judge G. W. Lawton of Mich.

Injurious Fungi and Diseases of Plants. A popular illustrated lecture on the evening of Sept. 9th. By Dr. C. E. Bessey of Nebraska.

Economic Entomology. A popular illustrated lecture on the evening of Sept. 10th. By Prof. A. J. Cook of Mich.

The closing exercises, on Friday evening of Sept. 11th, will consist of many very short practical talks.

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

We have now reached a season when, more than another, work is in order, and we have to put in practice the lessons of the year. We shall therefore content ourselves with noting briefly things not so much to be learned as to be remembered.

Plant life is a battle—a struggle with the elements which it strives to conquer. To do this it requires food. The successful planter is one who does not forget this. Thousands of plants live through hot dry summers, and cold hard winters, because they have more food than those which die. Grass, herbaceous plants, bedding flowers, trees, and shrubs,—all must have manure sometimes, as well as garden vegetables.

Deep soil holds moisture in summer. A dry hard soil rapidly parts with moisture. Make garden soil deep and open if you would have lawns and trees resist drouth.

Water must not remain long around roots when growing, or they smother from want of air. In clay soils if we deepen the soil we sometimes make the matter worse. Like a well it holds water. Water must pass rapidly in the open ground, as in a flower-pot. So, if you deepen soil see that it is also underdrained.

Sometimes it is desirable to plant and make garden where the ground cannot be underdrained. Then elevate the soil so that rain will roll off and pass away. Trees that do not care to grow in swamps have been made to grow well by throwing up the earth a little, on which to plant, so that surplus water should pass through easily.

Grass wants water and food as well as trees—but the roots of plants only extend in proportion to their branches. An Osage Orange tree 30 feet high, will extend its roots 30 feet or more from the trunk. But if the Osage is cut every year so that it does not extend more than five or ten feet, the roots are limited in proportion. So with grass; a lawn with the grass suffered to grow a foot or more in height will send roots down a foot deep, and dry and rob the earth proportionately, but if kept mown to less than an inch, the roots will drain the ground to only a proportionate depth. Therefore short grass under lawn trees may be a benefit by keeping the surface cool, and not drying the ground materially—but long grass and rare trees will fight and quarrel over the food, and neither rest satisfied.

In planting, set early as possible. Rootlets will grow till frost stops them. A newly set tree wants all the rootlets it can get. No matter how well we may work the earth in about the rootlets, there will be many spaces where earth does not touch. But the growing rootlet pushes in, and the earth is in contact over its whole surface.

After earth has been perfectly filled in the spaces, ramming is a great benefit. It presses the earth

in so that it must touch the roots. It is best to ram such a tree as if it were a post. But if the earth be not well worked in among the roots, ramming may be an injury.

Pruning out some of the branches is often a benefit. It lessens the evaporation till the roots get enough moisture to supply the waste.

Watering trees at transplanting is rarely a benefit. In most cases it is an injury, as the earth is taken away from the under surface of the roots by the sinking of the water in the soil.

Evergreens planted in exposed places are benefitted by screens from the wind where they are likely to suffer. A rare evergreen may often be much helped by having a bottomless barrel placed around it. It is wind not frost that is the great enemy to evergreens.

Small things as well as large do better planted in fall, if they can be protected from being drawn out by frost.

Plants draw out by frost, because they are lighter than the thawed earth. The earth and that which is in it expands—rises—by frost; when it thaws the heaviest sinks first, and the plant gets left. Any light covering above the plant that will keep it pressed down when the thaw comes, is therefore a guard against thawing out.

Roses, and many similar plants that are half hardy, die in winter only because their juices dry out. Bent down and covered with earth the evaporation is prevented, and the plants successfully protected.

Hyacinths and Tulips may be set out in the beds devoted to summer-flowering bedding-plants, as they will, in a great measure, be out of flower before the bedding-time comes around, when they can be either taken up and transplanted to an out-of-the-way-place to ripen, or the bedding-plants can be set in between where the bulbs grow, without either much interfering with the success of the other. As a manure for these bulbs, nothing has yet been found superior to well-decayed, sandy cow-manure; but where this is not conveniently at hand, well decomposed surface-soil from a wood will do as well.

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GAS KILLING TREES.

BY N. ROBERTSON.

I am exactly in the same condition as Nanz & Neuner with regard to street trees. A leaky gas pipe runs alongside of them for a considerable distance, and although I have had it thoroughly examined, and every appearance of a leak made good, the soil all removed for a considerable distance around, and the bottom of the pits made as tight with wet clay packed as close and firm as possible, yet they die off. At first there were about a dozen, but by continued trials I have got them all to take hold and grow, but four. Some have been now four years and look healthy so far. Last fall I had one large Elm that had been transplanted some years before, knowing that its roots would be in a strong condition to stand a good deal. I had all the soil permeated with the gas removed a long way around the bottom, packed over a foot thick with strong clay; but my efforts are of no avail for it is gone also. This position is in close proximity to a large main where other pipes diverge from it.

The only possible method I can think of would be to have the pipes uncovered, and a thick coat-

Taylor, of Long Island, Hill, of Richmond, Thorpe, of Queens, Hendricks, of Albany, Benner, of Xenia, and Jordan, of St. Louis, discussed the essay.

Michel, of St. Louis, discussed good cut flower plants for spring and summer, naming particularly Freesia refracta alba.

Hot water and steam took up a whole afternoon and evening. A large number of delegates participated in the discussion, and it was remarkable how much was said in favor of both methods.

The third day found a good time in a reception by Mayor Probasco at his beautiful residence at Clifton. This beauty spot will never be forgotten by those who participated. Philadelphia was selected as the place of meeting for next year. A new bi-monthly magazine, in the interest of the trade, published in Chicago, was circulated at the meeting, and was warmly received as likely to be of great service to flower growing and flower growers. It is called the *American Florist*, and seems to have in this first number the elements of complete success.

SCRAPS AND QUERIES.

MAURANDYA BARCLAYANA. — "Alexa" says: "Can you tell me the history of a plant I greatly admire, and which is known in gardens as the Barclayana Vine? I have looked through Mr. Henderson's Handbook of Plants, which, by the way, I highly value, without finding anything about it, which omission seems remarkable in a plant so common and so beautiful."

[Its proper name is Maurandya Barclayana, and it will be found in Henderson under this name. We do not know why it is that flower lovers have dropped the name of the genus for that of the species in this case. It looks like a determined effort on the part of flower lovers to ignore the honor to a lady which this pretty Mexican genus was intended to establish. The author of the name, Ortega, says it is for "Donna Catherina Pancratia Maurandy, wife of Don Augustin Juan, Professor in the Royal Botanic Garden of Carthagena—a learned lady, a sharer, if not indeed a leader in her husband's botanical labors." But all our text books give the honor to "Dr. Maurandy, Professor of Botany in Carthagena." It is remarkable that after the botanists should have dropped the lady, ladies themselves, whom we supposed started "Barclayana Vine," should have also given to a man the honor intended for the Professor's wife.—Ed. G.M.]

LILY OF THE VALLEY.—A correspondent informs us that in the farming districts of Pennsylvania, about Reading, the common people universally call Pyrola rotundifolia, one of the winter greens, Wild Lily of the Valley.

OLD OLIVE GROVES IN FLORIDA.—A Doylestown, Pa., correspondent writes: "About three years ago I wrote asking thee the name of a grove of exceedingly crooked, twisted, gnarled trees, at the mouth of the St. Johns, Florida. After persistent inquiry it turned out to be an Olive grove, planted, I doubt not, by early settlers of that part of our coast. It seems there is another Olive grove on an island (Sullivan's) on the coast of Georgia. All the name we could get for these trees when there, was, the 'Devil-tree.'"

QUEER NAMES.—A correspondent says: "It is amusing how plants get queer names. 'Joseph on the palings' for Josephine de Malines Pear, reminds me of a joke of a similar kind. Recently a lady friend going through my garden asked a name which I told her was a kind of Lythrum. I was surprised some days afterward to be told that the 'Bed-room' plant I had called her attention to, was certainly a beautiful thing. She wished me to note by this reference that she had remembered the name."

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

DUTCH PRIZES FOR AMERICAN EXHIBITIONS.

BY J. H. KRELAAGE.

The General Union for the Cultivation of Bulbs, under the patronage of the King of the Netherlands, at Haarlem, Holland, has in view to promote by all proper means, the love for flowers in general, and in particular the growing, and consequently the trade in flower roots; and to this end offer to the leading horticultural societies of the United States, out of their funds. prizes for hyacinths in bloom at the spring exhibitions of 1886. These offers have been accepted with thanks by the Pennsylvania Horticultural Society at Philadelphia, and by the Massachusetts Horticultural Society at Boston.

For the spring shows of 1886, of either of these two societies, at Philadelphia and Boston, there will be offered by the Federative General Union above-named prizes for 50 hyacinths grown in pots in 50 varieties, to be competed for by nurserymen, seedsmen and florists dealing in these articles. The prizes will consist of medals, engraved with the official stamp of the Union. As first prize, a gold medal; as second prize, a silver gilt medal; and as third prize, a silver medal. If it is proved that there is some success by this offering, it is the intention of the General Union to offer a following year again prizes for hyacinths, and perhaps too for tulips, narcissus and other articles of the Dutch bulb trade at various exhibitions in the U. S.

When is considered the small importations of flower-roots to the United States—a country so very powerful in wealth and increasing in civilization—in comparison to what England, Germany, and other countries employ, it seems that an advancement and extension of the love for flower roots must be desirable to all who appreciate the enjoyment of winter gardening and blooming of these beautiful flowers. *Haarlem, Holland.*

INTERNATIONAL EXPOSITION AT ANTWERP, BELGIUM.

BY M. H. LESTER.

It took just thirteen days per S. S. Penland from the foot of Grand St., Jersey City, to see the Exposition, I thought I would just take a race across and see some plants that would be new to me; but in this I am mistaken. However, I am glad I came, as it gives one an idea of how things are done in other places than America. There is a good sized park near the centre of the city, in which American trees and plants are well represented.

The Exposition grounds, although not near so large as at New Orleans, are in much better condition. It is a long time since I had the opportunity to see Roses and Geraniums in such condition at this time of the year; and Carnations look almost as good as they did when I was a boy. I find some very pretty effects in carpet-bedding, but no better nor as good as some I have seen at Fairmount Park, and other public and private places in the United States. I believe an attempt has been made of late to cry down this class of work; but I do not see why a man with a taste for it should not be allowed to indulge in it. It is not every man can make a success of it by any means.

There are two collections of Conifers in the grounds, of which Auracarias and Japanese Cypress—Retinospora—in varieties, form the major portion. Acer Negundo—sometimes called Box-elder—is used very freely here in a dwarf state. I marvel when I see Geraniums, Gladiolus, Mignonette, Lobelia, Stocks, French Marigold, and several other things look so fresh and healthy, when mine were all done a month before I left New Orleans; but so they ought! I have not seen a thermometer above 60° since I have been here, and when I hear folks complaining of the heat it makes me turn away for politeness, and smile.

Rhododendrons and Azaleas must have been a sight here earlier. I do not see what in the world they grow so many Laurus nobilis in tubs for, all shaved into a sugar-loaf shape, 7 and 8 feet high, with 2 and 3 feet of bare stem above the tub. If any one sees any beauty in them, I should like to know where it comes in. The inside Horticultural Department appears to have been divided off from one of the series of buildings occupied by the Exposition proper, by a partition and green baize cloth. The roof is partially glass, shaded with curtains, and from which the public are rigorously excluded. But to-day the jury pass their verdict on the different exhibits, and I see by the papers that the Horticultural Department will be open to the public to-morrow, when we shall see what we shall see.

I made several unsuccessful attempts to get in to-day. I think it must have been my lack of fluency in the Flemish language "as yet," or want of the insignia of a juror. At all events I talked American English to that fellow at the door, at one time for three-quarters of an hour at a stretch, and when I paused for breath he only turned his back on me and closed the door the tighter. I pitied that poor benighted creature, I did!

Antwerp, Belgium.

THE CACTUSES AT NEW ORLEANS.

We have the following letter on this subject: "In your July number I find under 'Editorial Notes,' a quotation from a letter written you, in regard to the rare Astrophytum myriostigma. As I had an exhibit of cacti at the New Orleans Exposition, and having had a lady come to me and inquire for the identical one you mention, wanting with it another rare cactus, offering for both 75 cents—I had but one of the two, and would not take 75 cents for the one—I suggested to her to take two other varieties to the value of 75 cents, telling her at the same time what she was getting.

She was buying for another party. Should your correspondent refer to this, he simply erred in his statement to you. I had no Aloe longiaristata. I would further like to state, in justice to the judges, that I was awarded four premiums and two recommended, and that they were awarded according to the premium regulations.

"I should think that, as the Editor of the GARDENERS' MONTHLY, and particularly as you want to express an opinion on the management of the Horticultural Hall, you should inform yourself about all the particulars, as everything is recorded and open to inspection.

"I write this explanation in justice to the jury and myself as regards my exhibit.

"Very Respectfully, J. H. ERKENER."

[Our correspondent is rather tart in the last paragraph but one, when he comments on the duty of an Editor to "inform himself about all the particulars." It is evident that he himself though on hand where "everything is recorded and open to inspection," has not been able to get at the exact facts any better than the Editor. Turning to the July number we find that a lady knowing that a friend wanted an Astrophytum myriostigma, bought one for this plant, which turned out to be something else. Now the present correspondent writes to us that a lady asked him for a plant of this kind, but he sold her something else, which she knew on buying was something else.

Therefore this latter lady cannot possibly be the same person as the first lady. It would be too absurd to buy and send to another a plant he did not want, under the impression that it would suit him just as well as the one he did want, and knowing that he would see it was not the one he wanted.

Surely even an Editor may be pardoned if he finds it difficult to pursue information properly with this illustration before him.—Ed. G. M.]

EDITORIAL NOTES.

AMERICAN POMOLOGICAL SOCIETY.—By the time some of our readers get this, this body will be in session at Grand Rapids, Mich., opening on the 9th, and continuing three days. We give the following programme so that those who cannot get there may note what a good time their more fortunate brothers and sisters are having:

Discussion of new fruits, Apples, Pears, Peaches, etc., etc. W. C. Barry of N. Y., T. S. Hubbard of N. Y., W. C. Strong of Mass.

Proper Nomenclature of Fruits. J. J. Thomas of N. Y.; P. Barry of N. Y., T. T. Lyon of Mich., Robert Manning of Mass.

Nomenclature of Russian Apples. Chas. Gibb of Quebec.

The Strawberry. F. M. Hexamer of N. Y.

The causes that produce colors in fruits and their design in nature. Jos. H. Bourn of R. I.

Influence of Pollen on the size, form, color, and flavor of fruits. C. M. Hovey of Mass., A. S. Fuller of N. J., Prof. W. R. Lazenby of Ohio, W. Crawford of Ohio.

American Grapes. T. V. Munson of Texas, J. B. Moore of Mass., G. W. Campbell of Ohio.

Small Fruits. Granville Cowing of Ind., C. A. Green of N. Y., E. Williams of N. J.

Fruits of the Northeast. Dr. T. S. Hoskins of Vt.

Fruits of the North. D. W. Beadle of Ontario.

Fruits of the Northwest. Peter M. Gideon of Minn., Prof. J. L. Budd of Iowa.

Fruits of the South. P. J. Berckmans of Georgia, T. V. Munson of Texas, John Saul of District of Columbia.

Fruits of the Pacific Slope. Dr. J. Strentzel of California.

Lessons from the World's Exposition. L. A. Goodman of Mo., T. T. Lyon of Mich.

Relative value of Fruits for Canning and Drying in comparison with those for Dessert and Market. Josiah Hoopes of Penn.

Insects injurious to Fruits, and Remedies. Prof. Wm. Saunders of Ontario, Prof. C. V. Riley of District of Columbia, Prof. W. R. Lazenby of Ohio.

Recent experiments with injurious fungi or diseases of plants, with remedies. Prof. T. J. Burrill of Illinois, Prof. J. C. Arthur of New York, Dr. C. E. Bessey of Nebraska.

Distant shipment of Fruits, packing, and other arrangements to secure success and profit. Parker Earle of Illinois, G. C. Brackett of Kansas.

The best latitude for leading varieties of Apples for marketing. W. H. Ragan of Ind., C. E. Brown of N. S.

The best methods for preventing or protection from frost. Prof. W. R. Lazenby of Ohio, F. K. Phœnix of Wis.

The best methods of exhibiting fruits. R. W. Furnas of Neb., Prof. S. Tracy of Mo.

Needs and methods for gathering fruit statistics. Hon. W. I Chamberlain of Ohio.

Methods of conducting State and Local Horticultural Societies. Geo. Elwanger of N. Y., L. B. Pierce of Ohio.

Hard problems in Pomology, with hints looking towards improvements. J. J. Thomas of N. Y., Prof. J. L. Budd of Iowa, Judge G. W. Lawton of Mich.

Injurious Fungi and Diseases of Plants. A popular illustrated lecture on the evening of Sept. 9th. By Dr. C. E. Bessey of Nebraska.

Economic Entomology. A popular illustrated lecture on the evening of Sept. 10th. By Prof. A. J. Cook of Mich.

The closing exercises, on Friday evening of Sept. 11th, will consist of many very short practical talks.

THE
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AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXVII. OCTOBER, 1885. NUMBER 322.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

We have now reached a season when, more than another, work is in order, and we have to put in practice the lessons of the year. We shall therefore content ourselves with noting briefly things not so much to be learned as to be remembered.

Plant life is a battle—a struggle with the elements which it strives to conquer. To do this it requires food. The successful planter is one who does not forget this. Thousands of plants live through hot dry summers, and cold hard winters, because they have more food than those which die. Grass, herbaceous plants, bedding flowers, trees, and shrubs,—all must have manure sometimes, as well as garden vegetables.

Deep soil holds moisture in summer. A dry hard soil rapidly parts with moisture. Make garden soil deep and open if you would have lawns and trees resist drouth.

Water must not remain long around roots when growing, or they smother from want of air. In clay soils if we deepen the soil we sometimes make the matter worse. Like a well it holds water. Water must pass rapidly in the open ground, as in a flower-pot. So, if you deepen soil see that it is also underdrained.

Sometimes it is desirable to plant and make garden where the ground cannot be underdrained. Then elevate the soil so that rain will roll off and pass away. Trees that do not care to grow in swamps have been made to grow well by throwing up the earth a little, on which to plant, so that surplus water should pass through easily.

Grass wants water and food as well as trees—but the roots of plants only extend in proportion to their branches. An Osage Orange tree 30 feet high, will extend its roots 30 feet or more from the trunk. But if the Osage is cut every year so that it does not extend more than five or ten feet, the roots are limited in proportion. So with grass; a lawn with the grass suffered to grow a foot or more in height will send roots down a foot deep, and dry and rob the earth proportionately, but if kept mown to less than an inch, the roots will drain the ground to only a proportionate depth. Therefore short grass under lawn trees may be a benefit by keeping the surface cool, and not drying the ground materially—but long grass and rare trees will fight and quarrel over the food, and neither rest satisfied.

In planting, set early as possible. Rootlets will grow till frost stops them. A newly set tree wants all the rootlets it can get. No matter how well we may work the earth in about the rootlets, there will be many spaces where earth does not touch. But the growing rootlet pushes in, and the earth is in contact over its whole surface.

After earth has been perfectly filled in the spaces, ramming is a great benefit. It presses the earth

in so that it must touch the roots. It is best to ram such a tree as if it were a post. But if the earth be not well worked in among the roots, ramming may be an injury.

Pruning out some of the branches is often a benefit. It lessens the evaporation till the roots get enough moisture to supply the waste.

Watering trees at transplanting is rarely a benefit. In most cases it is an injury, as the earth is taken away from the under surface of the roots by the sinking of the water in the soil.

Evergreens planted in exposed places are benefitted by screens from the wind where they are likely to suffer. A rare evergreen may often be much helped by having a bottomless barrel placed around it. It is wind not frost that is the great enemy to evergreens.

Small things as well as large do better planted in fall, if they can be protected from being drawn out by frost.

Plants draw out by frost, because they are lighter than the thawed earth. The earth and that which is in it expands—rises—by frost; when it thaws the heaviest sinks first, and the plant gets left. Any light covering above the plant that will keep it pressed down when the thaw comes, is therefore a guard against thawing out.

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[This is a very interesting paper, and will give pleasure to hundreds by the addition of another very beautiful ornament to the out-door flower garden.

It will be noted that the roots are not possibly frozen in the place noted by our correspondent, for though the thermometer go to zero, sometimes the covering keeps out the frost, and even though it does penetrate some inches, the deeper rooting portion is not reached by the frost. Ampelopsis incisa and the "Hardy" Passion vine, Passiflora incarnata are of this class. They have to be covered as described for this Manettia, but when they are not covered the plants generally hold their own, because the lower roots are not reached by the frost. But who would not take a little care to cover the ground if it will preserve these beautiful plants?—Ed. G. M.]

GAS KILLING TREES.

BY N. ROBERTSON.

I am exactly in the same condition as Nanz & Neuner with regard to street trees. A leaky gas pipe runs alongside of them for a considerable distance, and although I have had it thoroughly examined, and every appearance of a leak made good, the soil all removed for a considerable distance around, and the bottom of the pits made as tight with wet clay packed as close and firm as possible, yet they die off. At first there were about a dozen, but by continued trials I have got them all to take hold and grow, but four. Some have been now four years and look healthy so far. Last fall I had one large Elm that had been transplanted some years before, knowing that its roots would be in a strong condition to stand a good deal. I had all the soil permeated with the gas removed a long way around the bottom, packed over a foot thick with strong clay; but my efforts are of no avail for it is gone also. This position is in close proximity to a large main where other pipes diverge from it.

The only possible method I can think of would be to have the pipes uncovered, and a thick coat-

ing of plaster of Paris covered all around them, (or some such substance) such as I have seen on mains of heating pipes when passing through passages where their heat would be too strong. The trees mentioned in the article referred to are certainly in a bad condition, and will soon die, as the soil they are in will become more impregnated every day with the gas.

Government Grounds, Ontario, Canada.

AMARYLLIS IN THE SOUTH.

BY MRS. J. S. R. THOMSON.

Under this heading in August number I read with much pleasure and interest the above referred to article, and can corroborate and add to what "P. H. O." has so well said. I am well acquainted with and cultivate some five or six varieties, and am experimenting with others.

Whilst in Charleston, S. C., in April, some five years since, I saw one border 3 feet wide by 30 feet long, with hundreds of bulbs of A. Johnsonii in full flower, some stalks having as many as ten flowers. I could scarcely credit my eyes when this dazzling sight first presented itself, for I had always considered it as purely a greenhouse plant and had tenderly cared for my one prized bulb as such for years, and made an exhibition plant of it whenever in flower; and here spread at my feet were hundreds upon hundreds of those exquisitely beautiful flowers in open border. Becoming acquainted with the owner of the place, I questioned him and was assured they were A. Johnsonii and as hardy as a Narcissus. He kindly gave me bulbs, which have flowered since regularly in open border. I am now in negotiation with a friend who proposes sending me one bushel of small bulbs for equal quantity of Narcissi; which goes to prove their abundance in Florida at least.

Another variety, A. Hallii, I see offered by Hovey, Boston, as hardy that far north, is quite pleasing. Bulbs often size of pint cup, procumbent leaves 1½ inches wide by 24 to 30 inches long; flower (only fully expanded one day) pale flesh with deep rose stripe down its centre; flowers followed by seed-pods often size of an egg. Second day, flower begins to fold up, assumes the form of a trumpet and deepens in color to a pleasing pink. Two bulbs in my garden this spring each threw up 2½ feet high flower stalks, with ten flowers each, making 60 in all to two bulbs. This variety I find does not multiply rapidly—as it had no increase whatever in the five years I had them. On Decoration Day, in the same city, where the graves of many of our loved Confederate soldiers are, I saw dozens of wreathes, crosses, lyres, anchors, composed of this and a white variety—name not known.

Of the A. Sarniensis or true Guernsey Lily, so high priced and enjoyed at the North only by forcing, I have seen in one yard great clumps (equal in size to Hemorocallis lutea) of them, with from ten to fifty flowers in full perfection. This, to me, is the best of the whole section and differs so widely in its habits that even if tiresome I will describe minutely. After obtaining bulbs and planting, they remain dormant until about the 15th of September, when the glory of our gardens is fading, and we begin to realize that stern winter, with cold blasts, is approaching. Walking through our grounds you are attracted by a spathe-covered bud pushing through the soil, which in a few days unfolds and presents a dazzling gleam of scarlet, appearing in sunlight as if sprinkled with gold dust. A stout stem, one foot high, with the flowers arranged in whorls on top of stem, from five to seven, generally six, in a perfect floret. These individual flower-petals are ½-inch wide 2 inches long, with beautiful wavy outlined edges, recurved so as to touch the flower stalks, furnished with numerous stamens and pistils also recurved; pure red, which makes the flower appear like a round gossamer ball. When the flower fades then the tardy leaflets appear, ½ inch wide by 8 inches long; close to the ground with pale white stripe down the center. There this brave green thing remains, cheering the eye with its bright color during our hardest and dreariest weather. In later spring it, too, dries off to reappear again in new beauty in fall. The bulbs multiply with great rapidity, and in a peculiar manner,—as usual with all bulbs by small ones at side—but in addition by a bulb forming upon the neck of the bulb, *i. e.*, between the parent and the surface of the ground; looks as though the stalk had grown through a young bulb. I have in old established clumps often found six to eight in this way.

Still another one, called Amaryllis by early botanists, but now merged into Zephyranthes—Z. Atamasco—is a native here and known extensively as Fairy Lily in cottage gardens. By florists this beautiful variety of Amaryllis is too well known and too profusely written about to need description. Suffice it to say, that it well deserves a place, and honored one, on the list. No flower I cultivate gives me such generous returns for the care bestowed. Bulbs small and almost the tiniest give you from one to three

flowers per season, which adds grace and beauty wholly its own to any vase of cut flowers. A. Atamasco rosea exactly like in shape and size is a fit companion to A. Atamasco.

I, a native of the fair South-land; loving it with eager impetuosity; thank the kind Editor of the GARDENERS' MONTHLY for his true praise of this beauteous country, only telling truthfully of the grand capabilities (only partially developed) of this favored portion of the Union; and that others reading may be induced to verify his statements. Whilst with you of the cold North, frost king holds high carnival, we gather flowers the whole year; Violets from under the December snows (when we have that rare thing, a snow), Christmas blooming Lonicera, at Christmas tide; Narcissus and Roman Hyacinths in early February, followed in grand succession by myriads in March, April and May. Our gardens we begin always in February, and last spring our Narcissus were in flower in open border when forced ones were commanding twenty-five cents per stem in New York. Come and see for yourselves.

Spartanburg, S. C.

DARK HYBRID PERPETUAL ROSES.

BY D. M. DUNNING.

Among the hybrid perpetual roses none attract so much attention in my garden as the very dark ones. A great many people have an idea that Gen. Jacqueminot is about the only dark one grown. And they almost invariably exclaim when approaching a bed of dark roses: "I suppose these are Jacqueminots," when the fact is that the Jacqueminot as compared to our finest dark roses, is not a dark rose at all, but simply a red rose, and people are sadly disappointed when the celebrated General is pointed out to them. A few mornings since I gathered specimens of about a dozen varieties of the dark roses, and would arrange them as follows in the order of their general merit: Louis Van Houtte, Jean Liabaud, Baronne de Bonstetten, Prince Camille de Rohan, La Rosarie, Jean Soupert, Abel Carriere, Xavier Olibo, Pierre Notting.

Louis Van Houtte, combining great fragrance, beauty of form and freedom of bloom, I place first, although it is not as dark as several of the others. Jean Liabaud is almost the darkest one among them, and has great vigor and blooms freely but not continuously. Bonstetten and Prince Camille are quite similar with me, both very dark and of beautiful form, the former excelling in vigor and the latter in remontant qualities. La Rosarie and Abel Carriere are also quite similar, very dark, but with quite small petals, and not as good form as some of the others. Jean Soupert is the darkest rose among them, and of most beautiful form, but such a shy bloomer that I place it low on the list. Xavier Olibo is a very fragrant, beautiful rose, but not full, and must be watched closely to get one in perfection. Pierre Notting is strong, vigorous, and full of fragrance, but such a muddy tint of purple as to be undesirable. All the above roses grow darker as they wither and fade in the sunshine, a peculiarity which the crimson roses do not possess. Among the darkest crimson roses, Fisher Holmes, Horace Vernet and Charles Lefebvre, under high cultivation sometimes have a beautiful dark velvety shade, but in fading they get lighter instead of darker. There are many among the crimson roses darker and more beautiful than Gen. Jacqueminot, whose principal merit for outside blooming is, the great freedom and continuity of bloom. *Auburn, N. Y., July 16th.*

COTTAGE GARDENING AT UPLAND, DELAWARE CO., PA.

BY MR. J. WOODING.

This has been a peculiar and in some respects a discouraging season for gardening operations in this section. The early potatoes are very poor, early sweet corn nearly a failure, Lima bean plants ornamented with imitation pods, tomatoes sun-scalded and half rotten owing to the excessive drouth the early part of the season. As misery loves company, I started to visit some friends near Upland, Delaware county, about two miles from Chester. It gives me pleasure to speak of this place as one of the prettiest, cleanest, neatest, and best laid out town of the size I have ever seen in this country. The population, I understand, is about two thousand, mostly importations from England. Every cottage has a flower and vegetable garden attached. The flowers in the front of some of the cottages were a mass of bloom and in great variety, including the inevitable sunflower nodding its heads in the direction of its namesake. Some of the people cultivate their plants in pots, boxes, tubs, etc., which decorate the window sills of the houses. Others have an artistic taste for gardening. I noticed one cottage where the Madeira vine with its fine glossy leaves and deliciously fragrant, nearly white flowers, and profusion of bloom, was trained on wires and run up to a tree in three different directions in an hori-

zontal manner. These were growing out of a tub about 2 feet over, with Petunias and Tropæolums of different colors planted and hanging over the sides of the tub, which had a striking appearance and deserved much praise. I must say that these gardens are kept in remarkably good order, and the people of the place deserve great credit for their devotion and interest in so worthy an object. There are cottage flower shows in some parts of England, and premiums are awarded to those who can excel others in the cultivation of flowers,—and these are upheld by contributions from the wealthier classes who take a great interest in them. I think Upland would be a good place to start a Cottagers' Society of this kind. There would no doubt be strong competition. The streets of this place are laid out and numbered in Philadelphia style, and are lined with avenues of fine Norway and Sugar maples, which form a pleasant shade.

This charming place is owned principally by the Crozier family, who are noted for their kind Christian and benevolent character throughout Delaware co., and by whom the people are employed in cotton mills. They evidently take a great interest in their employees by providing good comfortable homes at a moderate rent, and they have donated several acres of land as a park for the benefit of the people. A debating society, reading rooms, etc., are all free. No intoxicating drinks are sold in the town. The private residences of the Croziers are the finest in Delaware county, and are splendidly laid out. I only had an outside view of them, it being Sunday, which afforded no opportunity to inspect them,—but I hope at some future time to have the pleasure of doing so. *Pencoyd, Montgomery Co.*

FAGUS PURPUREA TRICOLOR.

BY W. C. STRONG.

I wish to take time by the forelock and save the public from disappointment, and the nurserymen from one more strain upon their consciences. This tricolored beech is an exceedingly beautiful novelty, and deservedly received high praise as exhibited in France this season. Such novelties are hailed by the propagators as leading cards for their catalogues and for their agents. And when a stock is secured, how great is the temptation to bring out the colors in the strongest light! This beech in the propagating bed may have the most beautiful tints. In the early growth of June the colors are fine and healthy in the open ground. But the July sun is sure to scorch it and spoil all its beauty. Judging from the experience of a single season, I should say that this novelty will be useless in our clear strong sunlight. With me the delicate parts of the leaf become crisp and sear before midsummer, and the whole appearance of the plant is rusty and objectionable. Very likely it may be placed in some moist shaded nook where its colors may be brought out and preserved. But it is not a novelty to be commended for general use. *Brighton, Mass.*

EDITORIAL NOTES.

GARDENING IN NEW BRUNSWICK, CAN.—A New Brunswick paper notes that a love of gardening is progressing rapidly. The Normal School grounds are especially beautiful. A beautiful fountain has been placed near the City Hall, and Mayor Finety is named in connection with other proposed horticultural improvements. His own grounds are tasteful, and a large greenhouse heated by hot water among its attractions. The Queen Hotel, owned by Mr. J. Edwards, is to have handsome gardening improvements made, and tropical plants adorn the hotel. Coleman's Hotel is also a patron of flowers. Attorney General Blair has a very fine garden, which includes a large vegetable as well as floral department; and Mr. J. Valentine is noted as a successful planter of trees. Mr. J. A. Morrison, a mill owner, has a nice garden; Mrs. Morrison, however, being noted as the presiding genius in this littie paradise. Judge Steadman has a garden famous for the neatness with which everything is kept; and it is said of our correspondent, Mr. Bebbington, that he has a garden well worthy of anyone's seeing, and that he has twice as much space devoted to flowers as ever before. Even the clergy fall in with earthly vanities such as gardening in this pretty town, and the Reverend F. Alexander's ground is famous in those parts for its fine lawn, flowers, and collections of trees and vines.

CALIFORNIA PALM.—A correspondent of the *Gardeners' Chronicle* says that in the Lisbon Botanic Garden, our California Palm, Washingtonia filifera, grows with amazing rapidity. The curator, M. Davean, says: "It is here in Portugal the king of Palms, as regards its great vigor of growth."

FINE SUGAR MAPLES.—On the grounds of Wm. Allan Richardson, near Louisville, some Sugar maples measure seventeen feet in circumference.

ROSE, LAMARCK.—This grand old Noisette rose is of French origin; and was raised by M. Marechal, in 1830.

PERPETUAL POLYANTHA ROSE.—A variety called Jean Drivon has been introduced by M. J. Schwartz, of Lyons, France, which is said to be a perpetual bloomer.

SCRAPS AND QUERIES.

DARK FLOWERING CACTUSES.—Mr. A. Blanc writes: "Mr. Bassett asks for a hardy red blooming Opuntia, to plant with the native yellow-flowered Jersey variety. I send you a sample of a variety sent to me from Montana, and said to be a pink flowering kind, but I would not vouch for it—not knowing the name of it; do you?"

[The piece sent is Opuntia Missouriensis, of which there are darkish varieties in the Rocky Mountain regions, as well as pure yellow—but we never saw it make flowers under culture.—Ed. G. M.]

NEW SINGLE TUBEROSE.—The Michel Plant Company, St. Louis, writes: "We send by to-day's mail a specimen of a new single Tuberose, and also a spray of the common, by way of contrast. This originated with us a few years ago, and is a much freer bloomer, and often has, as is shown in the specimen sent, two or three branches on a stalk. The blooms are more erect, closer together, and recurved like a Fuchsia. It is with us a great acquisition for loose bouquets and cut flowers."

[This is certainly distinct from the common single white. In addition to the points noted by our correspondent, it is a clear white, while the common has a dull brown tint at the apex of each division of the flower-cup; while the general tint is just a little creamy. To our mind this is just such an improvement in the tuberose as the Harris variety of Lilium longiflorum is to the original species.—Ed. G M.]

RHODODENDRON CULTURE.—"Max.," Staunton, Va., says: "The Rhododendrons to which allusion was made (p. 262), had plenty of leaf-mould, and were in aerated soil. The trouble was, that while their foliage did not mind summer heat, it enabled the spring winds to exhaust the vitality of the plant so that they did not seem able to assimilate their food, even in the light form of leaf mould. Glad to say that either the liquid manure or some unknown factor had the desired effect, as twenty-three out of twenty-four forlorn-looking specimens are now in a vigorous condition. Had never heard of liquid nor other kind of manure for them, but something had to be done, so I tried it at a venture. Is it safe to attribute the success to the liquid manure?"

RYE GRASS FOR LAWNS.—"Red Top," Pittsburg, Pa., says: "Will you please advise some of your readers as to the merits of Perennial Rye Grass (Lolium perenne) as a component part of a mixture for lawn grass. It is claimed to germinate quickly and soon produce a green sward, but is it not of too coarse a growth to make a lawn like a carpet, such as we all have in our minds, even if we do rarely find them a reality."

[Rye grass a quarter of a century ago was very popular round Philadelphia for lawn making. As our correspondent suggests, it makes a good lawn quicker than any other, is by no means a coarse grass when so used, and is very acceptable because it comes green in spring with its new shining growth before any others. But it seems to gradually disappear, the blue grass of the "Kentucky" name, which is one of the natural grasses of this region where it is known as Pennsylvania green grass, takes its place. There are numbers of lawns about here once of rye grass that are all of green grass now. We are not much in favor of lawn mixtures in sowing seeds, because the one the best adapted to the soil soon crowds out all others, but can see no objection to a little rye grass being sown with the blue grass, which, in most cases will be found the best for American lawns.—Ed. G. M.]

BLEEDING IN A NORWAY SPRUCE.—"W. F. G.," Springfield, Mass., writes: "I have a Norway Spruce that bleeds badly from the but end of several dead branches. All are on one side. The dark spots in the figure at the left are dead limbs, the light spots the branches that are alive in the same neighborhood. I have cut off the dead limbs but would like to ask what should cause them to bleed and die, and if there is any danger of the balance of the trees dying can I remedy the trouble? The first dead limb is about ten feet from the ground. It is also the first limb. The full height of the tree is about forty feet. The dead branches extend about halfway up the trunk."

[The turpentiny matter, that flows from old knots or wounds in coniferous trees, is not thought to injure them materially; though we suppose, as in the case of sugar from a sugar maple tree, there ought to be some little strain on the vital powers. At least no one thinks of attempting to stop this waste of turpentine.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

CACTUSES.

BY WM. FALCONER.

I am much pleased with Mr. Siler's article, p. 231, on Cactuses at home. Mr. Siler's name as a botanist and collector in the far West has been familiar to me for years, and I read his communications with much interest. In Eastern gardens we are unable to give Cactuses similar conditions of growth to what they enjoy in their native wilds, but happily for us Cactuses are easily grown, and cheerfully respond to love and good care.

Hardy Cactuses. — Apart from Opuntia Missouriensis, O. Rafinesquii and O. vulgaris and their varieties, we have very few hardy Cactuses. I have succeeded in wintering safely O. pescorvi and some others, but with uncertainty. I have found Echinocactus Simpsoni very uncertain; it would live through one winter all right and rot off during the next one. Echinocereus phœniceus and a form of Mamillaria vivipara I have known to survive several winters, but not in my garden; and Mr. Menand showed me in a neighbor's garden at Albany a bunch of what he called Echinocereus Krausei, which had been growing there out of doors for several years. As a garden plant I have found Opuntia Missouriensis the hardiest and most accommodating of all Cactuses, and I never knew it to miss flowering; with me it always blossomed copiously. In the case of hardy Cactuses I have found they must be grown where water shall not lodge in winter, as for instance on raised ground, and if they can be covered over by some leaves, thatch, or better still, snow, in the winter, they come through with less injury in spring. My old neighbor, Mr. John C. Hovey, an ardent admirer and grower of Cactuses, gave me the following list of Opuntias which he found to be hardy in his garden, ordinary level clayey soil: Opuntia vulgaris, O. Rafinesquii, O. R. grandiflora, O. cymochila, O. stenochila, O. hystricina, O. Missouriensis, O. M. macrosperma, O. M. albispina, O. fragilis, O. fusiformis and O. Pescorvi. Among those mentioned by Mr. Siler I have tried Cereus Englemanni, Echinocactus cylindraceus, Opuntia rutila and Mamillaria chlorantha, also Agave Utahensis as hardy plants, but all died. I would say here, that I have grown some fifty distinct species and varieties of Agave and have found A. Utahensis the most difficult of all to grow. Dr. Edward Palmer, the eminent botanical collector, sent me plants from their native places, and I have raised it from seeds and coaxed it in many ways, but without avail; the plants appeared unhappy. And this is the only species of Agave I have failed with.

Tender Cactuses.—I regard all Cactuses not absolutely hardy as being tender and treat them accordingly. While a few degrees of frost may not hurt some of them, still it does not do them any good. Epiphyllums, Phyllocactuses, Rhipsalises, Melocactus and the more tropical Cereuses as C. grandiflorus, C. Jamacaru, C. nycticalis and C. cœrulescens like warmish winter quarters. The general run of "cushion" Cactuses, Opuntias and the like, if kept in dry airy places and inactive, may be wintered safely in a moderately low temperature, but under 40° is unsafe. All Cactuses delight in being set out of doors in summer. Cereuses, Echinopsis and Opuntias enjoy being set out in open sunny places; but Mamillarias, while they like being planted out, very much dislike moist foggy weather, heavy rains, warm weather immediately succeeding wet weather, and cold or heavy night dews; all of these cause "rust," and "rust" is incurable. I have always grown Mamillarias and all other delicate, weakly, new, rare and valuable Cactuses in cold frames in summer, and covered them over with sashes as a preventative against the above evil conditions. In propitious weather they were fully exposed.

I prefer planting out even in frames in summer to keeping them in pots, because I thereby have a good opportunity to see that my plants are thoroughly cleaned twice a year—at planting out and lifting time—and the plants grow much better and bigger and bloom more copiously when planted out than when kept along in pots. If Mr. Robertson, p. 171, had much to do with Opuntia exuviata, I shouldn't wonder if he did say something naughty; but that species excepted, what in earth is there in other Cactuses to incite an evil word? There is a knack in handling Cactuses. For a good many years I handled the fullest collection of cactaceous plants in the country, and twice a year every plant passed through my own hands. I myself planted them out in May and lifted or repotted them in September, and all because I was afraid if I trusted any of the workmen with the job they would be more careful of themselves than of the Cactuses. And I can assure you no orchidist ever watched the progress of Vanda Sanderiana or Phalænopsis Stuartii with more anxious pride than I did my Cereus Thurburi, C. Palmeri, C. Greggi, Echinocactus myriostigma, E. Phyllacanthus and other pets. And how disgusted I would get when to some visitor I would point approvingly to Cereus giganteus, 20 inches high and 10 years old, to be informed, "Oh, that's nothing; you should have seen it at the Centennial." And so I did, and elsewhere, too; but such another life-long, garden-grown plant as that is I never came across east of the Mississippi.

I have found that each and every kind of Cactus that I have grown will do well in a gritty, turfy loam. Drain the pots well and pack the soil firmly. Lime rubbish, pounded bricks or rotten stone added to the soil has no visible beneficial effect whatever; the drainage will not clog nor the soil get sour if you don't over-water your plants. *Glen Cove, Long Island, New York.*

PROPAGATING FROM BLINDWOOD.

BY ERNEST WALKER.

Experience is a good but expensive school, and those that learn there are not apt to forget their lessons. One of my first lessons was in growing fuchsias for flowering. I took cuttings of blind shoots and they grew and grew and made splendid plants, but they attained quite a size before they did as well blooming. A little philosophy as to the trouble suggested using cuttings from old plants that we might say were on the point of flowering. The result was, the plants came in bloom even sooner than I had any idea of, and I had a fine lot of globular plants, about 10 inches high, full of bloom while yet in 2½-inch pots. It is the same way with Heliotropes and other plants. One season we propagated a lot of Chrysanthemums late, and in fall had plants about 6 inches high, covered with bloom, which astonished those who saw them, and thought they were dwarf till we explained. It is clear now. The length of time required, and the ease in getting plants to bloom, depend greatly on how far the disposition of the parent plant to bloom is developed. If we take cuttings from a plant on which the bloom buds are already beginning to form, we can have them in bloom in the cutting bed; or, if we take them from a plant in which the disposition to bloom is not yet beginning to develop, or, a plant devoting its energies to growth instead of reproduction (flowering), we will have to wait for blooming some time—till that stage naturally arrives, or depend on unusually favorable circumstances.

I have on some occasions had trouble in getting varieties of roses to bloom that ordinarily were very profuse, while others around them were blooming bountifully, and which other seasons had bloomed readily. The trouble was, no doubt, in the cuttings from which the plants came. Propagators do not generally discriminate between the bloom and blind shoot in selecting cuttings; besides, the blind shoot may offer such fine cuttings, and it is difficult for the propagator to resist the temptation; and some poor amateur or florist must pay the cost—perplexed to know the cause.

New Albany, Ind.

[A very long chapter in a treatise on the Theory of Horticulture, might be worked out from the articles that have appeared in the GARDENERS' MONTHLY on this topic. The author of such a chapter might begin by reminding his reader that a plant was not an individual like an animal; but rather a collection of individuals, something like a city or a republic, and that these individuals had hereditary powers, like the individual in the animal world. We can cut these individuals from the community, plant the cuttings, and each will retain the characteristics it possessed when cut off, just as a seedling plant would do. He would prove this by what are known as sports. A branch of a rose exhibits some peculiarity. It is cut off and placed on its own roots, and then we have Sunsets, American Banner, Isabella Sprunt, and so on. Or, a branch of a peach may produce a a nectarine. We take that branch, bud from it, and we have lots of nectarine trees. Briefly we have the theory that any part of a plant has an hereditary character of its own, as well as the whole plant itself.

Now apply this to the case in point. Will plants from a barren shoot be as floriferous as plants from flowering ones? Theoretically we should say not. But it is rather a question for experience to settle. Mr. Walker's observations confirm this. Those of other observers do not seem to have done so.

But in all these discussions we must not forget that in nature there are numbers of operations

going on at the same time in a plant, and which we must not forget in formulating rules of practice. For instance: plants commence to flower only after vegetative vigor has been checked or exhausted. We need not take space to elaborate this here, as its accuracy as a general principle will be conceded. Now if we continually propagate from flowering wood, under hereditary law, we may expect more floriferous plants, but these plants will be of a lower grade of vitality, and more liable to disease, or to "run out." Plants from shoots of full vegetative vigor will be less floriferous, but will grow better, and when they do come into a flowering stage, may bloom more abundantly and last longer.

These are the theories philosophy would work out; but for all this a grain of actual experience will be worth a ton of theory.—Ed. G. M.]

ROSE CULTURE.

BY E. FRYER.

The subject of ventilation for rose houses, is one of much importance to rose growers. To grow plants for the purpose of propagation requires a different treatment from that of growing them for bloom. The former requires a close, moist heat, while the latter, though not needing a dry heat, yet requires more air and sunlight. I never had better success than in houses made of portable sash, which, during the summer months were entirely stripped of the sashes, having the full benefit of the rains. The wood splendidly ripened, and very little trouble with spider; they were always prepared to give a full crop of blooms during the winter. This of course applies to plants growing in the natural soil or planted out on benches in the houses.

With Hybrid perpetuals in pots where it is an object to have a succession of blooms, the best success is always obtained from keeping plants in cold frames or pits where they are so covered as to be accessible at all times during winter, from which they can be set in to grow at such times as the wants of trade require.

Here it may be well to remark that by pot plants is meant such plants as are grown one or more seasons in pots before being forced, and not those taken from the open ground, and rushed into pots in the fall or early winter. The average number of blooms from the latter is generally small in comparison to regular pot grown plants.

For years I have propagated roses from blind as well as blooming shoots and have never noticed any difference in the blooming qualities of plants produced in either way. The matter, however, is well worth investigating. One thing is generally known to rose-growers, which is, that the rose-plants require new soil well enriched.

We may feed manure and fertilizers to banks or benches of roses in whatever quantity we think best, but can never obtain the same results as by occasionally taking out the old soil and renewing with new or fresh soil,—rotten sod, such as florists generally use. If the practical man does not know the chemical constituents of such a soil, he knows what is a great deal more useful for his purpose, the plants will grow well and produce strong wood, from which only, he can expect a good crop of flowers.

A Marshal Niel plant in one of the houses here bore over 2,700 blooms from last Dec. to last June. This is the greatest crop it has borne so far. The only extra treatment it received being an addition of new soil and a mulching of old manure in which a good sprinkling of bone dust was mixed. The plant is not yet 8 years old, the roots growing in the natural soil, and being all inside, budded on Lamarque, which I think is a better stock than Chromatella; it is certainly more floriferous on the former than the latter. *Delaware, O., July, 1885.*

DIEFFENBACHIA WEIRII.

BY CHARLES E. PARNELL.

Mr. Weir's Dieffenbachia, Dieffenbachia Weirii, is a very beautiful and distinct stove plant with ornamental foliage, belonging to the natural order Araceæ. It is a native of South America, where it was discovered by Mr. Weir, a collector in the employment of the Royal Horticultural Society, of London, in whose honor the specific name was bestowed upon it.

It is considered to be one of the finest of the Dieffenbachias, and as it is a plant that is known for the beauty of its foliage, it can be safely recommended as a very distinct and desirable foliage plant. It is of dwarf habit, the oblong ovate foliage being of a bright green color, thickly blotched and spotted with pale yellow, and should be grown in a moist atmosphere in order to bring out its true character. When well grown it forms an excellent and very attractive plant, alike suitable for decorative or exhibition purposes.

This Dieffenbachia is a plant easily cultivated, requiring a compost of light loam and well-decayed leaf mould, in about equal parts, with the addition of a little sharp sand, to render the compost a porous or open one, and it is necessary to have the pots well-drained; if they are filled with one-third of drainage, it is none too much. In potting use porous or soft-baked pots, and be careful not to overpot the plant. During its season of growth, which is during the summer months, it should be given a temperature of from 65° to 75°, a light partially shaded situation, as close to the glass as possible, and a liberal supply of water, both overhead and at the roots. In the winter months it should be kept rather dry and cool, a temperature of from 55° to 60° proving amply sufficient.

When first introduced, this plant was very highly prized, but of late it has been sadly neglected, the reason being that its juice is said to be very poisonous, and that the plant has an awkward and unsightly appearance when at rest; but I should consider these objections of little or no account. The reputed poisonous character of the plant can be avoided by the exercise of a little care when handling it; and its appearance, by removing it to a less conspicuous place, as its season of rest approaches.

Propagation is effected by cuttings, and if the cane is split through the centre in the spring, and the pieces placed in the sand and given a brisk bottom heat, an abundance of young plants will spring up in the course of a few weeks. When well-rooted, the young plant should be carefully potted into 3-inch pots, and kept close for a few days until they have taken root. If they are repotted as often as necessary, and liberally cared for, nice specimens will soon be obtained.

The generic name was given in honor of Dr. Dieffenbach, a German botanist, and the specific name in honor of its discoverer. *Queens, N. Y.*

CHRYSANTHEMUM FLY.

BY W. F. BASSETT.

Every purchase of Chrysanthemums brings us an army of this pest, but I have always succeeded in getting rid of them. My method is to watch the plants carefully every day and wash them in strong soap-suds. Tobacco soap is best, but any good soap will do; taking care to allow none to escape from the dish of suds, and follow up this treatment without intermission as long as any remain. Various insect remedies are said to keep down all these pests of the greenhouse, but that is not at all satisfactory and calls for "eternal vigilance." When extermination is at all practicable it should be the result aimed at. If any one will inform me how I can get rid of Mealy bug at any reasonable cost, I shall consider it the most valuapiece of knowledge yet gained in greenhouse management. If they only attacked the tops of the plants I think I could clear them out, but I find them in the sand of the cutting-bench and in the pot. If I had a new greenhouse to build and no other very near it, I think I would not allow a single plant to go into it until it had gone through a thorough quarantine and an insect purgatory, and would, as far as possible, refuse admission to anything but cuttings known to be clear, and if it was necessary to introduce any plants would remove all soil and carefully wash all the roots as well as tops before admitting them.

Hammonton, N. J.

SCRAPS AND QUERIES.

FLOWERING OF CACTUSES.—"W. P.," Oswego, N. Y., says: "Last spring in looking over back numbers of the GARDENERS' MONTHLY, I noticed different notes on time of blooming of night-blooming Cereus, and as we have two large plants, I thought I would take note of their time of blooming. The one has long, rope-like, square stems about twenty feet long—C. grandiflora; the other has flat stems—C. latifrons. The plant is about twelve feet high and from four to six feet across. C. grandiflora had twenty-eight flowers, which opened as follows: one on July 3d, nine on 10th, four on 20th, three on 22d, one on 23d, eight on 27th, one on August 1st, one on 15th. The flowers slightly fragrant. The C. latifrons had twenty-two flowers on the first time it bloomed, which opened: eleven on June 18th, seven on 19th, two on 20th, the other two, two weeks later. Then it showed another batch of forty-one flowers, which opened: five on July 30th, thirty-three on 31st, three on August 1st. And now I can count about forty buds, making the third batch this summer. Does this variety usually do so? This variety very fragrant.

[The plants are not correctly named. C. grandiflorus is not square stemmed, and C. latifrons, we believe, not fragrant.—Ed. G. M.]

FLOW PIPES IN HOT WATER BOILERS.—"A Constant Reader," Bangor, Me., says: "Your remarks on the above subject (page 199 July number) seem very reasonable and may be made very practicable.

"Water certainly must need greater force to run up hill than down; the better showing is what

every interested reader of your magazine would desire. As I am about to make some changes I would thankfully accept any information to gain better results; I am convinced from your remarks that you have this mode in practical use. Will Mr. William Saunders and Mr. Thomas Meehan please give an illustration of the operation—such as the elevation of the boiler, the exact descent of the pipes, etc.

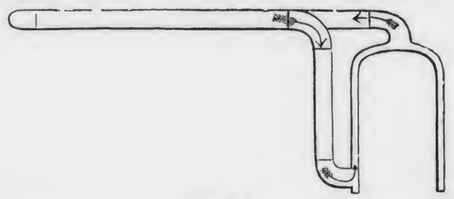
"Thanking you and your valuable contributors for many useful and practical suggestions."

[The annexed figure 1 is a sketch of Mr. Saunders' boiler communicated to the GARDENERS' MONTHLY for Sept., 1872. So far as we know it has always

(Fig. 1.)

worked very well. But we subjoin a criticism of Mr. Saunders' plan as made by Dr. Fisher, of Fitchburg, Mass.:

"Looking at this matter the way I do, I was very much surprised to see a sketch of an apparatus, on page 263 of the September number of the MONTHLY, given as a model, in which the descent of the pipe was gradual from the commencement of the flow to the end of the return. It is true that in such an arrangement there would be a circulation, but a little consideration will show its weak point. Suppose the water, as it leaves the boiler, to be at the temperature of 200°, and that upon its arrival at the botton of the boiler it has cooled down to 100°. The average temperature of the boiler column will not be 150°, the mean between the two extremes, but probably 160° or



(Fig. 2.)

170°, according to the arrangement of the fire. The average temperature of the opposing column, which includes the entire length of the pipe, will not be 150°, because the hotter end of the pipe will radiate heat faster than the rest of it, and thus the average will be something less than 150°, say 140°. Then we have, as a basis of circulation one column of water in the boiler of the temperature of, say 165°, and another one in the pipes of 140°. Now if the pipes were laid level as I have described, and as I have attempted to show in Fig. 2, the basis would be a temperature of 165° for the boiler column, and a temperature of 100° only for the return column. This would give a more rapid circulation than the other by just the difference due to the specific weights of the water at those different temperatures, and which could not be less than one hundred per cent."

The criticism is of course theoretical, but is well worthy of study.

The cut Fig. 2 explains Dr. Fisher's idea. The flow and return pipe being on the same level are not distinguishable from each other till near the boiler.—Ed. G. M.]

WILL WARM WATER RUN DOWN HILL?—"G. P. C.," Taunton (we suppose Massachusetts), asks for more particulars regarding Mr. Saunders' method of permitting the warm water in a boiler to run down hill. The answer to another correspondent we suppose will be all he requires.

DISEASE IN COLEUS.—"F. L. F.," Catonsville, Md., writes: "I send by mail a root of Coleus Verschaffeltii, and will be greatly obliged if you can assign a cause for the fungus growth upon it. We have had numbers of plants destroyed by this disease, and desire to have if possible a preventive for next year."

[Attacked by myriads of minute insects, only seen by a strong lens, the larvæ penetrating the tissue in every direction. Never having seen Coleus in this state before, we can suggest no remedy.—Ed. G. M.]

NEW OR RARE PLANTS.

AMASONIA PUNICEA.—In reference to this remarkable new greenhouse shrub, we have the following note from Messrs. Veitch:

"This is unquestionably one of the most beautiful flowering shrubs that has been brought under the notice of horticulturists for many years. It was introduced by us from British Guiana through our collector, Mr. David Burke. It is of erect habit with elegant spreading foliage, the leaves are of elliptic-lanceolate form, from 9 to 10 inches long. The inflorescence is very brilliant, being particularly striking from having a series of the richest vermilion-crimson Poinsettia-like spreading bracts, arranged in pairs along the entire length of the racemes which are a foot long; these bracts, the lowermost of which are 4 inches long, are very persistent, remaining in perfection fully two months. From the base of each bract are produced pendulous tubular flowers, in twos and threes, of a creamy white color, offering a striking contrast to the rich coloring of the other parts of the inflorescence. We received a First Class Certificate for this plant from the Royal Horticultural Society, September 9th, 1884."

HALF NATURAL SIZE.

Amasonia punicea.

Fruit and Vegetable Gardening.

COMMUNICATIONS.

INSECTS IN CABBAGE ROOTS.

BY W. F. GALE.

On page 239 "J. R.," Elizabethtown, N. J., inquires how to get rid of the maggot that destroys cabbage by boring the root. I have been troubled very much with the same pest in my cauliflower. My remedy is to remove the soil from about the plant and thoroughly clean out the maggots, then put in fresh soil with a liberal quantity of superphosphate of lime mixed in. I have not lost one plant in fifty treated this way. To rid the ground of the pests I would recommend to plough in the fall, and scatter on eighty bushels of salt to the acre, well harrowed in. I think that air slacked lime, say about ten barrels to the acre, would also be of great benefit. *Springfield, Mass.*

CULTURE OF THE BLUEBERRY.

BY DELOS STAPLES.

The Blueberry is a valuable fruit, and is the only reliable fruit to grow in the extreme northern latitude where most other fruits winter-kill. It is perfectly hardy; stood 40° below zero the past winter without showing any injury to the topmost buds. The fruit ripens in this latitude about the 1st of July, and is borne in clusters like currants, and are about the size of the wild gooseberry; shape, round; color, a bluish black when fully ripe. The flavor is equal to the raspberry, a very mild, rich subacid, pronounced by most people delicious. It may be served with sugar and cream or cooked sauce, and is splendid for pies and canned for winter use. The plant seems to flourish in all soils, and is very productive, will yield 100 bushels per acre under ordinary cultivation. It makes a beautiful hedge, the shining dark green leaves and the blue fruit make a pleasing contrast. They commence bearing the first year after setting out, same as raspberries. It is propagated from suckers and root cuttings; for garden culture plants should be set 2 or 3 feet apart in the rows and 4 or 5 feet between the rows; for field culture 6x6 so the cane can be thoroughly cultivated both ways with a horse hoe.

West Sebewa, Ionia co., Mich.

[A large number of species of Vaccinium are known under the general name of Blueberry. The Huckleberry and Billberry are species of Vaccinium. The kind referred to by our correspondent is probably the Vaccinium corymbosum, or possibly V. Pennsylvanicum—kinds with rather large fruit. In the Eastern States these berries are so abundant in wild places, and are gathered so cheaply by children, that no attempt to cultivate them would be profitable. In localities far away it would be well worth while, and our correspondent's article is very useful and suggestive. Any soil that is cool and damp and yet not waterlogged, would suit them. On heavy clay soils they would no doubt prove a failure.—Ed. G. M.]

EDITORIAL NOTES.

The Short Crop of Strawberries.—Though in many places there was a full crop, in numerous instances there were scarcely any flowers on the plant, and curiosity is rife as to the cause. Some say the flowers were "winter killed," but in the cases brought to our attention clearly the autumn buds had made no flowers to kill. It is a clear case of neglect to make flower buds.

Pear, William Fuller. — D. Lee & Son, Madison, O., send samples, which were eaten the first week in August. It is a greenish yellow pear, about the size, form, and season of ripening, as Giffard, coarser flesh, rather sweeter, but on the whole we think not so good as a perfect Giffard. But the Giffard is not in favor with pear lovers, because it is a poor grower, liable to crack or something or another. It is claimed for the Fuller that it has superior characters in these lines, and may therefore reasonably expect to become popular.

Fig Culture in Florida.—Major Russell, of Baker County, has set out twenty acres of figs, but whether with the view of trying to dry them, or for use in the fresh state, is not noted.

Cherries from California.—The freight from California to the East is bearing hard on California fruit growers. Of one car containing 1,660 boxes, large consignments were forwarded to Cleveland, Boston, Philadelphia, Milwaukee, St. Paul, Baltimore, Indianapolis, Buffalo, Memphis and other places. The cherries brought from 17½ to 25 cents per pound, according to grade, and were being sold by retailers at from 30 to 40 cents per pound.

There is very little margin left for growers at the above figures unless freights are lowered; but the probability is that if the freights were lowered, the prices would fall lower than those quoted above. It is the disposition to cut under one's neighbor that everywhere prevails, that lowers profits quite as much as high freight rates.

Alpha Peach.—This ripened this year in Germantown, on the 28th of July. Alexander has ripened in other years in the same place at dates varying from the 20th to the 26th of July. It is about the same size and general appearance with Alexander, but not having this season an Alexander for comparison, we cannot state the exact difference. The flavor and general qualities were, however, excellent, and all that a first-class peach should be.

SCRAPS AND QUERIES.

Running out of Varieties of Fruit.—A Virginia correspondent says: "Referring to your notes on decay of varieties of strawberries (page 271), why is the spread of fungus troubles 'more fairly to be attributed to climatic causes' than to a combination of soil and climate? Do not soil and climate mutually re-act upon and affect each other? Or, do you hold to the theory that varieties have a limited existence and their descendants decay about the time the parent plant should wear out?"

[There is no evidence that we know of that varieties "run out" in the general acceptation of that term, which is that a tree or plant is but an individual, and that a cutting or graft from it does not extend the time that the individual was appointed to live. But horticulturists do know that when varieties are moved to soil or climate, or both, unfavorable to health, they do wear out, run out, or in some way become unhealthy and finally disappear. For instance, a strawberry or gooseberry in a cool moist summer climate just adapted to its constitution by nature, will not get the spot on the leaf of the one or mildew on leaf and fruit in the other. There is no known reason why a variety there should not last several hundred years. In hot dry summer climate these fungous diseases rapidly develop, and the variety soon gets poor. Hence we have to be repeatedly introducing varieties that will be "free from mildew" and "thoroughly hardy," till a few years under the enervating influences make them as bad as their predecessors. In the North where the summer climate is moist we do not hear of strawberries running out, though they grow in many varied soils. Hence it is a fair inference that soil has much less to do with the failure than climate. Still our correspondent's point that unfavorable soil may sometimes be a factor in the unfavorable result is undoubtedly correct.—Ed. G. M.]

Grapes in Valley of Virginia. — "Max," Staunton, Va., under date 5th Sept. says:—"For once the Vineyardist has nothing of which to complain—no rot, mildew nor any other ill, to which the grape is heir, troubled him this season, if we except the bees.

"At this point, Brighton ripened first, making handsome bunches and yielding well—fully two-thirds as freely as the Concord. Began cutting them August 27th, but the bees had anticipated us and claimed a large share. Moral, plant Brighton for its vigor, fecundity and quality, but if there are bees in the neighborhood use paper bags.

"Salem and Wilder ripened next, both doing well—cut these Sept. 1st. Heretofore the rot has injured Salem and Catawba very materially but both escaped this year. Concord and Delaware followed, both maturing sufficiently for table use by Sept. 5th, and yielding heavily; Catawba, Clinton, Norton, Geothe are all promising; the Clinton coloring rather slowly and irregularly. Reports from other portions of the Valley and eastern slopes of the Blue Ridge, are to the same general purport. Tell us, Mr. Editor, to what causes climatic or other this is due. An exceedingly dry summer and autumn, succeeded by a fairly, though not excessively, moist spring and summer, are the conditions. For years past Catawba and Salem have rotted in both wet and dry seasons. The culture and pruning have been the same. Annual applications of stable manure and close pruning in the winter. No summer pruning whatever. Western exposure. Gravelly, limestone soil."

[It has always been noted that exceedingly dry summers or exceedingly dry soil, is favorable to heathfulness in the grape, and for this reason it is quite common to find localities so hilly that corn would turn its leaves to shavings in summer, given up to grape culture. Just why this is can only be answered hypothetically for we do not know that the reason has been actually demonstrated.

We do know that what we call mildew and rot come from minute species of fungus that require very nice combinations of heat and moisture to have their spores germinate. Those who believe that fungi can attack the healthiest vegetation would, therefore, "guess" that the fungus would not germinate in the dry atmosphere. Again we do know that the grapevine is very sensitive to the loss of its root fibres. Black rust on the roots, Phylloxera on the roots, a little more water than can rapidly pass away round the roots, or rather young fibrous roots, weakens a vine, and then mildew and rot hasten to get their work in on the foliage and fruit. So then those who believe that fungus only follows weakened vegetation, point to the dry weather and "guess" that the roots could not but be healthy in such a season.—Ed. G. M.]

SMALL BERRIES ON LINDLEY GRAPES.—Mr. Lorin Blodget says: "I pick to-day a few bunches of grapes from the Lindley vine, Rogers' hybrid No. 9, which are clearly affected by a cross fertilization with a Delaware vine alongside of them; a much younger vine, and for the first time large enough to give opportunity. I send you a small box picked from a high point, 35 feet, and on the eastern roof slope, where it has been ten years in full bearing. They are not quite ripe, but the sparrows are at them, and have already thinned out the bunches, so I must cut them.

"The smaller grapes are both on the bunch among large ones, of the usual size, and often make nearly a full bunch of themselves. They are without seeds in most cases.

"The great Lindley vine was severely affected by the winter, and has but half a crop. The western extension was shortened 35 feet, and the northern part came out a month late. Until the last of May much of it remained dormant. Later, it has grown rapidly, with many shoots 12 to 16 feet, of this year's growth. It is still an enormous vine, and now in full vigor. Delawares are not ripe, by a full month."

[We are very glad to have these specimens, because they furnish the occasion to point out how even the most intelligent may at times be mistaken, and as accounting for the many statements that have been made from time to time, favorable to a belief of an immediate influence of pollen in fruit. Here are bunches of Lindley having many of the normal size, and many small like Delaware, and other bunches in which all the berries are small, and one may well be excused for supposing, a Delaware being near, that they were Delaware bunches produced by the action of the Delaware pollen on the flower of the Lindley. Beyond this fact of small size there is, however, nothing to indicate any difference from Lindley. The color of Lindley is like the Delaware, so we cannot infer Delaware from that, and flavor is not Delaware but Lindley. But the absence of seeds tells the whole story. We know from experience with grapes that crosses produce as perfect seeded berries as the originals. A Delaware and a Lindley, crossed together, would produce berries bearing seeds. These having no seeds evidences against the idea of the influence of Delaware pollen. But another strong reason is that all hot house grape growers are familiar with the vines often bearing grapes not half the usual size, and wholly seedless, and this in houses all of one variety and where the pollen influence of some other variety is therefore wholly out of the question.

It is usual to refer the cause to something that interferes with the proper nutrition of the vine or flowers in the bunch, after the flowers have been fertilized enough by their own pollen to start them on the fruiting track. Nutrition ceases, from some cause, after fertilization, but before the minute embryos have started to become perfect seeds. This is the reasoning of intelligent grape growers, but we do not know that it has been demonstrated by absolute proof.—Ed. G. M.]

LUTIE GRAPE.—This is an accidental find on the grounds of Dr. Chisholm, near Nashville, and believed to be a seedling. It is at any rate different from any variety known to the Doctor, who is well versed in grape knowledge, having some fifty varieties to compare it with. It ripens earlier than any he has—about 15th of July. Some sent to us reached here on the 8th of August, but after their long journey the berries had fallen from the stems, and had somewhat fermented. There were 78 berries, and appeared to have been two bunches. So far as we could judge under these conditions, it appeared to be an excellent kind. It is claimed by those who know it, that it is perhaps the most desirable variety for the South that has ever been introduced. It is not only early, but has a large bunch, with the general qualities equal to the Delaware, and the growth as strong as the best of the well known kinds. These points should certainly commend it strongly to grape growers.

CAPERS.—A Southern correspondent would like to know whether any one has tried to raise Capers —Capparis spinosa—in the South, and with what result?

FORESTRY.

COMMUNICATIONS.

SUCCESSION OF FOREST GROWTHS.

BY ROBERT DOUGLAS.

Three years ago I published my observations on the succession of forest growths in the Rocky Mountains and all the forests in the Northwest. Since that time it has been observed that the same rule applies to Europe. In the GARDENERS' MONTHLY for July an article on the same subject copied from the *Independent* and headed "Succession of Forest Growths," names the very same trees that I referred to, but in a way which shows that the writer did not understand my meaning. He says, "In the Rocky Mountains of Colorado the first tree to take possession of the rocky heights is the Aspen Poplar. No other tree attempts to take possession of the sterile soil."

Now my observations have extended over many years, and long journeys in the mountains, yet I fail to bring to mind a single instance where the aspen has taken possession of the sterile soil on the rocky heights, except where the land had previously been burned over; and where the land had been burned over, it is proof positive that timber had already grown there; so this does not prove that it was the first tree to take possession.

The natural place for the aspen is in moist soil, and there it will be found making its best growth. It was an interesting fact for me to notice that this tree, or its seeds rather, are so delicate that they will not germinate even on land slides, but newly burned land is in the best condition possible for delicate seeds; and this tree has a better opportunity than any other I know of for reaching the burned land. Its seeds ripen in spring; they are produced in incalculable numbers, and so small that a million would not weigh a pound; they are floated in the air on wings of down, so that they are the only seeds which can reach the mountain tops, but they cannot germinate so well on ordinary dry land as many other trees; and undoubtedly if the seeds of pines could reach the sterile soils and rocky heights, they would be more at home than the aspen.

The writer, still speaking of the aspen, says: "No sooner, however, does it spread over the wide acres, than the twisted pine (Pinus contorta) rushes in, contests the ground, and finally conquers."

Now, in what way can the Pinus contorta "rush in" on these rocky heights of sterile soil? Its seeds are not light like the seeds of the aspen. They could not cross the valleys from another mountain, and the trees, each one of them must have a seed to start from. In cases where Pinus contorta "rushes in" as soon as the aspen has spread over the wide acres, it will be found that it started from the seeds at the same time the aspen did, but in four years it would not be so tall as the aspen grew the first season.

Pinus contorta (it is now called Murryana) has very persistent cones. I have seen trees that have held their cones sixteen years, very many if not all of them still enclosing the seeds. Heat is the best and almost the only instrument that will open these cones; hence when a fire destroys the forest many of these seeds are just in the right condition to germinate, and they can be seen springing up in countless thousands, and by counting their annual growths in the older burnings, you may tell quite accurately in many instances, the year when the forest was burned.

It is quite possible that the aspen may antedate all others of our forest trees, indeed it has been found imbedded in the fens in Northern Europe, deeper than almost any others of our commonest forest trees, but this is no reason why we should jump to the conclusion that its growing on the Rocky Mountains at high elevations proves it. It only grows on burned lands and on moist places, and its seeds give it that advantage.

I do not see a particle of evidence in any of the mountains and forests, to prove that there is a succession of forest growths at all, except where the lands have been burned over, or where the conditions have been changed by being flooded, or by being changed by some convulsion of nature; and these instances are so rare as hardly to need a passing notice. The writer goes on to quote Hansen's observations on the same subject, but in this case also he neglects to state that the aspen is the first tree to appear on burnt lands, and the birch the next, just as I reported of the burnt lands in Northern Wisconsin, and the Black Hills of Dakota. It seems to me that any man who will take time to look into this matter will see plainly that the birch must follow the aspen, and see just as plainly that it must drive the aspen out

for it too produces immense quantities of fine light seeds. It does not require a very large birch tree to produce two or three million seeds in a single season. Now although the birch did not have an even start with the aspen, it has a very great advantage over it after it once gets established; as the aspen is a short-lived tree, and does not reach a great height, the birch soon overshadows it. And add to this that the aspen seeds will only germinate on finely pulverized soil or on moist land, it will be seen that it must confine itself to the margins of streams, or to moist lands—as it does—to abide its time, till another forest fire gives it an opportunity to extend its bounds.

Now what evidence have we of the succession of forest growths, where the timber has been cut off without fires having run over the land? In New England pines are fast covering the lands where pines originally grew. And as a general thing, this is so all over the country, except in some parts of the country where the land is very sandy, and having become broken and washed by heavy rains, the sands have been blown around in a few localities without having been burned over; and in dry climates like Colorado, where, when the forests have been burned off, and the land exposed to the parching sun and drying winds, there is no probability that the land will ever produce vegetation of any kind for ages to come. Indeed it is only at the highest altitudes that Pinus Murryana is to be met with, and where there is more moisture than nearer the base of the mountains.

Waukegan, Ill.

EDITORIAL NOTES.

THL WOOD OF THUJA GIGANTEA, AND OF CUPRESSUS NUTKAENSIS.—A correspondent of the *Garden* says:

"Thuja gigantea is, among the trees on the Northwest coast, the Indian's best friend, for out of its wood and bark he manufactures endless articles of domestic, hunting, fishing, and war-like economy. Most of their canoes are hollowed out of it, at least in Vancouver Island; and there is a case quoted where a canoe made out of Cupressus Nutkaensis, in Vancouver, was quite an exception, and indeed the canoe was probably traded from some of the northern tribes, and not of Vancouver manufacture at all. The Indian ropes are also very commonly twisted out of its bark. The tree which I took for Thuja plicata, and out of which I happened to see the Indians, just at the time I wrote the letter quoted, twisting ropes, I believe, from after investigation, to have been only a stunted form of T. gigantea, and that T. plicata is not a separate species, but for reasons which I have given in another place, and cannot now again repeat, is indeed, only a variety of T. gigantea. North of latitude 53° Cupressus Nutkaensis takes the place of Thuja gigantea, and is applied by the Indians to all the useful purposes of T. gigantea, and to some others in addition. For instance, at the Matlakatlah Mission, on the coast of British Columbia, in about latitude 54° north, where there are fine groves of it, it is sawn into lumber and sent to Victoria, where it meets a ready sale among the cabinet-makers, as it takes a fine polish and works beautifully. Most of the prettily polished discs and little cylinders used by the Indians in gambling are made either from this wood or from that of Acer macrophyllum. It is also valuable for ship or boat-building. The wood of T. gigantea is whitish, but in its fresh state is yellower; hence the name Yellow Cypress applied to it. It is light, tough, durable, and easily worked. The property of durability it shares with Thuja gigantea, and, in addition, it has a pleasant fragrance. On this account the Russians about Sitka used to call it dushnik, or scented wood. It was absolutely at one time exported to China, and returned marked with Chinese characters, which warranted it as 'real Chinese camphor wood,' puissant for many purposes and a sovereign remedy against moths in drawers! In repairing old Fort Simpson, the only log found sound after twenty-one years' trial of those used for underpinning was a stock of this."

To which we may add that it is well-known to American botanists that Thuja plicata, of English gardens, and Thuja gigantea are identical. In regard to the range of the two species named it is an error that north of latitude 53°, Cupressus Nutkaensis takes the place of Thuja gigantea. The writer of this penetrated near latitude 60°, without meeting a single specimen of the Cupressus, though the Arbor Vitæ was abundant up to that point, and probably it extended further. In the Russian Church at Sitka, which the writer had the chance to examine, the fragrant wood was certainly the Arbor Vitæ. With a good chance to botanize for a couple of days about Sitka, no specimen of the Cupressus was seen. The Indians converted to the Greek Catholic system do not sit in church on seats, but either kneel or sit on their heels, which is the Indian method of sitting; and for a "carpet" the floor is strewn with branches of the Arbor Vitæ. Our party brought to these people the news of the coronation of the Czar, a year after date! and the church was at once festooned with the Arbor Vitæ, and not the Cupressus. Our little party had also a chance to touch at the Indian Mission of Matlakatlah, which is on the border line between Alaska and British Columbia. We found over a thousand of Indians civilized by a missionary named Duncan, living in houses built by their own hands, like unto ours. They had a grand church, built also by their own hands, under the direction of their good missionary; a very beautiful building, and which was built wholly of Thuja gigantea. The odor from the wood reminded one of the incense-flooded cathedrals of Catholic Europe. Unfortunately it rained in torrents, and it was not possible to do much botanizing around that spot; but all the trees seen were of Thuja gigantea.

At Killisnow Island in Alaska, the Reverend Mr. Hill, a Presbyterian Missionary, teaching Indians the industrial arts, had established a saw mill, and told the writer that it was only on rare occasions that they found a tree of the Yellow Cypress. The Arbor Vitæ was everywhere. On the whole, we conclude that the impression that the yellow cedar is a common tree in Alaska, and takes the place of the Thuja, which is to be limited to a range farther south, is erroneous.

The Arbor Vitæ is well worthy of its specific name, gigantea, as seen in Alaska. It grows quite as large as the average of pine trees in our Eastern States.

FORESTRY IN NEW HAMPSHIRE.—Report of the Forestry Commission appointed by the Legislature, July, 1881. The Commission consisted of Governor Hale, Messrs. Henry G. Jesup, Joseph B. Walker, William H. Hills, Joseph Barnard, William S. Ladd, Ithiel E. Clay and William F. Flint. They served without any expense to the State, except $300 for clerical assistance.

Like all these Commissions, and efforts by States, in connection with the Forestry question, this has resulted more in a collection of facts bearing on the subject, than as formulating any comprehensive plan on which the Legislature can act. Indeed, the commissioners themselves say that the chief result hoped for from their work is, that "it may provoke discussion and elicit opinions" as to what can be done. As to opinion, the report itself shows how little help can be had from that source. A number of letters appear from "old inhabitants," who very well know that there has been a decrease in rainfall since the forests have been cut away; but when we turn to another part of the report, to the records of the rain guages, we find that there has been an increase rather than a decrease of rainfall, since the "oldest inhabitant" takes his retrospective view. If springs have dried, or rivers show less water in their courses, it will be from other causes than a deficiency of rainfall.

A very useful feature of this report is, the full list of the woody plants of New Hampshire, by William F. Flint.

It is evident from this and other reports, that the great drawback to Forestry planting in our country is the liability to forest fires. A complete and exhaustive chapter is given to this topic here. The usual recommendations are repeated here, that "laws" prescribing penalties, and fixing liabilities should be established. A sort of police to put out fires, and hunt for incendiaries is recommended. As to fixing liability, that is surely clear enough by the common law now, but we all know what it is for a poor fellow to undertake to sue a rich corporation for damages. Five, ten, or even twenty years are taken, before "Justice" renders her decision; and when she does, the legal costs take all the damages one may be awarded.

After a careful study of this able report, we are still of opinion that our plan is the best—to make it the duty of the public prosecutor, not to fine people who accidentally start fires, but those who leave dry brush around for people to fire; and to imprison (fines and damages being nonsense) those through whose negligence in these matters, loss of life or damage to others ensues.

FORESTS AND THE WATER SUPPLY.—As frequently noted in these columns practical matters depend so much on correct deductions, that what would be nothing but abstract science to most persons, becomes very much more to those in our profession. It is of first importance that what passes for science should be absolutely correct. This has been the ground taken by this magazine in regard to whatever there is in the question of rainfall and forestry. The ideas emphasised by Marsh in his "Man and Nature," mainly through our efforts, are now thoroughly exploded. It is now conceded that forests are a result and not a cause of climate, and their reflex influence very small. The only claim left now is that forests are distributors of moisture. Perhaps they are. Indeed facts incline that way; but inclination is not definite proof, and much that is offered is but assumption. Below is an extract from the recently issued report of the Water Department of Philadelphia, whose Chief, Col. Ludlow, is one of the most intelligent gentlemen who has ever occupied that position:

"During the past 60 years the Schuylkill has displayed a marked diminution in its minimum flow. In 1816 this was estimated at 500,000,000 gallons per day; in 1825, at 440,000,000; in 1867, 400,000,000; in 1874, 245,500,000. This remarkable decrease, not being accompanied by any great change in the rainfall, nor probably in the

total annual discharge of the river, is no doubt largely due to the destruction of the forests within the drainage area, whereby the conservative action of the woodland is lost, and the rainfall is permitted to descend rapidly to the bed and pass off in a succession of freshets." Page 70, Report, 1884.

The Schuylkill is the river that supplies Philadelphia with water. By minimum flow is the least quantity that has flowed during any 24 hours in the year. Col. Ludlow admits that there has been no certain method by which the flow could be measured, and he tells us at page 75 that next year he will try and inaugurate a better system. We may perhaps doubt if the smallest quantity that came down in any one day in 1816 was five hundred million gallons a day. Still it is possible that the remarkable difference between 1816 and 1874 stated, should not wholly exist.

Presuming then that there has been a decrease, is there ground for Col. Ludlow's statement "no doubt the decrease is largely due to the destruction of the forests, etc.?"

Singularly enough there was little if any forest destruction on the headwaters of the Schuylkill between 1816 and 1825, yet the figures show a falling off of 60,000,000 gallons. The greatest forest destruction was between 1825 and 1867, yet though there is four times the period of time the falling off has been no greater than in the single ten years when there were no trees of any consequence cut. In the last ten years, between 1867 and 1874, when there was comparatively little timber left to cut, when the amount of timber was nearly the same at the end as at the beginning of the period, the river fell off nearly one-half.

It is clear that whatever falling off there may be, or is, the fact has no connection with the forestry question. It will be an extremely interesting study what is the cause of this remarkable difference in the river's summer flow; but we shall never know what the cause is if we accept without hesitation Col. Ludlow's "no doubt" as true science.

Wood for Cigar Boxes.—Mr. F. R. Jackson says in *Gardeners' Chronicle* that Cedrela odorata, and not the Red Cedar, furnishes the wood of which cigar boxes are made.

Natural History and Science.

EDITORIAL NOTES.

New Races of Flowers.—Since it has been well established by the work of the Florist that the old maxim that "like produces like," as a test of a true species, is just as characteristic of any garden variety, much more encouragement is given to experiments in getting new races of flowers out of what would once have been regarded as mere freaks of nature, than formerly. These so called freaks can be reproduced from seed, and thus we are able to perpetuate all sorts of curious things. Some one in the Old World has thus fixed a curious freak in the common garden Cyclamen, a representation of which we here reproduce from the London *Gardeners' Chronicle*. A lace-like frill has been developed from the petals, and it may be termed the "Fringed Cyclamen." It was raised by Mr. Clarke, a florist of Twickenham, near London.

There is a grand field among these freaks of nature open before American flower lovers and improvers.

Sources of Nitrogen in Plants.—Mr. Darwin's careful experiments on the so-called carnivorous plants, to our mind conclusively overturned the conclusions of Boussingault, Lawes, Gilbert, Pugh and others, that plants do not obtain any nitrogen from the atmosphere, but solely from the earth through their roots. Air plants contain an abundance of nitrogen, but aside from this suggestion, Mr. Darwin's work indicates that the uses of glandular hairs, and perhaps plant hairs of any kind, are connected with the absorption of nitrogen. The view that plants do derive much nitrogen from the atmosphere receives now additional force from an excellent paper published in the *Country Gentleman* of Aug. 27, from the pen of Prof. Atwater, of the Wesleyan University, Conn. Of the nitrogen in plants on an acre, his results give over one-third as derived from the atmosphere.

SCRAPS AND QUERIES.

Finding Rare Plants.—"Mrs. J. S. R. T.," Spartanburg, S. C., writes: "I have an absorbing desire to catch the attention of all to the many attractions of our fair sunny South-land. Floriculture being my specialty, I am best fitted—if fitted for anything—to speak of her thousands of beauteous flowers, leaving to others the more difficult task of lauding her other claims to consideration. Latterly I have made one of my pleasures a commencement of the collecting and study of native plants, and am often overjoyed when I find to me an utterly unknown species or variety. Early in spring I was told that in our near vicinity there was to be found in abundance a wild tiger lily, from which date I have eagerly gone in search of it with happy results of not only finding statement verified, but, what I think of far more importance, I think it a new unnamed variety, for this reason: I sent specimen of flowers without the bulb to Dr. Asa Gray, Harvard University; he wrote me, "That it was L. superbum; that the bulb ought to have a rhizome attached, which I had probably left in the earth," which I am sure I did not. I had expected to find it attached and examined to see if the digger had not left it in the earth. No sign of any rhizome or of a break on the bulb; which proves to my satisfaction that if the rhizome is an essential to L. superbum that my find is not that variety. In Chapman's "Flora of Southern States" before me, he mentions six varieties, viz.: L. Philadelphicum, Canadense, Carolinum, Catesbæi, Superbum and Grayi, all to be found in South Carolina and adjoining States. I was astonished and pleased to note a peculiarity in a specimen of above variety before me which I have never seen in other varieties nor remember to have read of. The plant grows from 10 to 20 inches high with leaves with wavy outlines, subacute, arranged in sectional whorls 3 inches long, by 1 inch wide; six in a place, with this peculiarity that three are narrower than the other three, and arranged on stalk like petals of lilies are on pericarp, *i. e.*, three smaller inside leaves than the three outer rows; looks exactly like a green lily. Bulbs size of hickory nuts. Many scales easily dislodged. Flower petals 6¾ inches wide by full 3 inches long, much recurved like Turk's cap, section centre of lily cup pure pearl, while deepening from cream canary to deep glowing orange scarlet, with large purplish spots in heart extending as far only to where the orange scarlet tints begin. Now, Mr. Editor, please tell me my find's name. Is it an old and well-known variety, or a new discovery?

[The description does not certainly fit any lily with which we are acquainted that is indigenous to that region; at the same time it must be said that the country has been so thoroughly worked over by botanists that the chance of finding things wholly new is very small. It is far more likely that the botanist fails to recognize the old friend in the description, than that the plant is wholly new. Perfect specimens of bulbs, leaves and flowers are necessary to identify a lily. — Ed. G. M.]

Mistletoe on the Oak.—"Student" inquires "whether the Mistletoe is found on the Oak in this country, as it is never found on the Oak in the Old World?"

[The fact is the Mistletoe has been found on the Oak in a few rare cases in England of late years, and there is evidence that it was one of the most common occurrences in Druidical times—2000 or more years ago. The great probability is that the Mistletoe has no objection to any tree, and its occurrence on particular trees in particular places or particular centuries depends on climatal causes. In Texas our Mistletoe is found chiefly on the Mesquit; in Virginia and North Carolina on the Elm; in Delaware and Maryland on the Persimmon; in Canada on the Poplar.

It probably requires peculiar climatic conditions at the germinating season, and these conditions can be made more effective on certain trees than on others. Some trees will better aid these climatic conditions than others, and if climate

changes in any one place, another kind of tree will then favor the conditions better than the one which formerly filled the post of assistant to nature. Now climates must of necessity change, and the climate of Great Britain cannot possibly be the same as it was when the Druids cut the Mistletoe from the Oak trees; and with the climatic change there will naturally be a change of tree by the Mistletoe to suit the new conditions.

CHANGE IN AN AFRICAN MARIGOLD.—Mr. A. Blanc says: "I send you two flowers of a Marigold, both taken from one plant. You will notice that one is single and the other perfectly double. This plant produced nothing but single flowers at first, but now a number of fine double ones are appearing. This shows how seedsmen are often blamed unjustly for imposing on people, for in this case I gathered the seed myself from perfectly double flowers sent to me by Messrs. Hallock, Son & Thorpe to engrave. Perhaps the seed not having matured on the plant, may account for it."

[This is certainly very curious; the single straw color, and the double orange, on the same plant. But we do not know how far this may excuse some complaints. If we planted seeds of the double orange and half the seedlings came single straw color, we should be apt to suspect a mixture of seeds for all this experience.—Ed. G. M.]

LITERATURE. TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

LETTER FROM PARIS.

BY M. H. LESTER.

Before I left Antwerp I visited the flower market. It is held under the trees in the Public Square, and the plants were chiefly of what we should know as of the bedding class. The Lobelia and Heliotrope seemed of a darker blue than ours; the flowers of the Roses larger, and dwarf Dahlias and Asters more floriferous. I made a running visit to Ostend, Ghent and Brussels. The king of the Belgians has his beautiful grounds here. He is passionately fond of gardening, and will no doubt regret that he was absent when an American sovereign, such as your correspondent, called on him. It takes twelve hours from Antwerp, but most of this time seems taken up in changing cars. Car fare is cheaper for the person, but they get even with the American rate if the poor fellow has any baggage.

Well, Paris and its fashions! Every body asks about them. It is the ladies themselves, not their dresses. A coffee sack on a French lady would look as well as a dress by Worth on the lady of any other country. The substantial character of the buildings impresses one in Paris. They look as if built to defy time and stand forever, and statuary, real representatives of famous people, meet the gaze everywhere. The streets come together into three, four or five points so often, that one can easily get lost, and are so cleanly kept that crossing stones are never thought of. Flower stores are in every block, but there is a strange sameness in the pot plants, Euonymus, Pandanus, Fuchsias, Ficus elastica, Asters or Marguerites as they call them, Geraniums, Gloxinias, Heliotropes, Roses and Mignonettes comprise the bulk of what one finds in any one of them. The old summer Rose, Madame Plantier, is the most popular of any, although there are large numbers of Etoile de Lyon, Mermets and Neils. Cut flowers of Gladiolus and Mignonette are everywhere in abundance. The Grand Opera House, and the Avenue de l'Opera opening out from it, strike one with wonder; but almost every store thinks it essential to have the windows and doorways embellished by pot plants, which add immeasurably to the charming scene. The military and professionals of various classes, with their uniforms and robes of office, worn in the streets, also add much to the supposed gaiety of a Paris scene. As I went through the opera avenue a regiment of cadets, boys of not over 14, with fife and drum, made things lively. Fruit and vegetable stores abound. Fruits are handled more carefully than with us, and the "bloom" on the plums and grapes is carefully preserved; and the vegetables, carrots, radishes, scorzonera, artichokes and cauliflowers, they keep so fresh and plump as if but a minute before brought from the garden. On the foliaceous vegetables it is hard to note a wilted leaf. After a great deal of crossing in and out of famous streets amidst cooling fountains, and the shade of umbrageous sycamores, I found myself in the garden of the Tuilleries. Oranges of over a hundred years old in tubs, line the promenades. There are probably 1000 of them. The stems are about 18 inches in circumference, and the trees are shaved into exact globes about 4 or 5 feet thick. Immortelle flowers are much used, and freely, to wreath the statuary on festival days. The flower beds are so thickly planted that it is a wonder how so many kinds can be made to grow thickly and harmoniously together. In the lake are two black swans, of which I have often read but never saw before. Part of the garden is set apart for nurses and children, where they gambol and play to their hearts' content, and crowds of children flock round and enjoy the Punch and Judy shows. Gentlemen sit in other parts and read their papers, while near by under the shade of the sycamores, ladies join in exploring the interior of lunch baskets. The Chamber of Deputies, hospitals and asylums here, grand, not only in their majestic architecture, but also in their wonderfully long French names, all cluster hereabouts, with the Cathedral of Notre Dame, in which lie the remains of Saint Denis, whom every good Parisian glories in as his patron Saint. Passing by the Obelisk covered with inscriptions in ancient Egyptian, which I had not time to stop and read, I made for the pretty garden spots in the Elysian Fields, or, if we must be French when in France, let us say Champs Elysees. An avenue a mile or so long, crowded with carriages, if crowd is a fair name for the jam of carriages, and with wide strips of park gardening on each side. The Parisian, however, never loses sight in his gardening of plenty of play ground, and it is surely here. All sorts of characters perambulate these public garden tracts; one of the most curious was an old man with a sort of bag of iced drinks over his shoulder, and a faucet under his arm from which he would fill your cups as you pass along. Parties play cards on tables so long as there is no appearance of gambling going on; and there is the conjurer with his tricks to amuse the young ones. Beds of low shubbery, such as Rhododendrons and Spireæs, with flowers everywhere intermixed are everywhere in this public pleasure garden and play ground, and though millions on millions must crowd here continually, are rarely injured. The floral mixtures seem very strange and novel. Here is a clump of our American Kalmia latifolia with scarlet Geraniums mixed through them. Deodar Cedars and Ageratums, Fuchsia fulgens under dwarf Weeping Willows, Arabia Sieboldii with Clarkia pulchella, and so on.

Then again special features would be had by using all Japan Maples, Euonymuses, or Retinosporas, and contrast the whole with Begonias and such flowering things among them. Curious effects by mixing were had with our mammoth Sequoia, Oleanders, Magnolia grandiflora, mixed up with Marguerites and such like. Gypsophyllum is largely used for edging, as also is the lovely sun-worshipping flower, Gazania splendens. But they cannot begin to come up to the well-kept lawns of the United States—though I be burned as a heretic I will say it—nor will they ever till they knock their old scythes into ploughshares, and send to Philadelphia for a cargo of lawn mowers. And yet they are ahead of us in some things. You won't catch them sprinkling streets by a clumsy, ugly, filthy concern called a water cart, but a neatly dressed man has a system of light riveted hose on a pair of wheels which he leads around and sprinkles at a tithe of the cost for watering that your old lumbering horse water barrel does. From the top of the grand triumphal arch—or, if we must, Arc de Triomphe, you may see all Paris; but to a lover of neatness and order few things will be more pleasurable than the clean asphalt walks everywhere around. Twelve of these beautiful avenues centre here. You rush for an omnibus to get to your railroad station, but the law allows only twenty-four in and twenty-four out, and you must await your turn till an empty seat comes along. It is a happy thought for the fellow inside that you have plenty of room without another to crowd on you; but for the poor wretch on the street who knows he has but five minutes to make his train and may be fifteen before that empty seat comes along, the idea has more of the thorns of the rose than of its beauty and fragrance.

You may comfort yourself, however, if so disposed, while waiting, by investing forty American cents in a bottle of good wine. At length we get the omnibus, and as we ride back the way we came, still wonder at the clean streets, the simple method of sprinkling, the iron gratings around the sidewalk trees, and the beauty everywhere, till reaching the Place de la Madeleine and seeing the whole square one large flower market, we leave the omnibus to enjoy the pots, and sights of buyers and sellers around them. It is enough to make one look as if asked to swallow the Washington Monument! I never saw such a quantity of pot flowers together before. Palms of numerous species, with the dwarf and curious trees and shrubs, such as Eucalyptus and Myrtles, Yuccas and Amaryllis, no end of Roses, with of

course huge lots of our old friends, Madame Plantier, Begonias, Pomegranites, Oleanders, Coxcombs, Lilies of many kinds, Friesia, Veronicas from New Zealand, Cannas, and a Dwarf White Dahlia, which in a six-inch pot will have half a dozen flowers and the whole plant not much higher than the pot itself. Then there were Perennial Phloxes, Arundo Donax, Hydrangeas, Coleus, Ericas from the Cape of Good Hope, Gardenias, Aucubas, Campanulas tortured and twisted around stakes to all sorts of fantastic forms; these will give some sort of an idea of the kind of things that go to make up the grand flower market in Madeline Square; or, if we must we must, Place de la Madeleine. The cut flowers, of course, furnish an ample contribution to this beautiful scene. Huge bunches of Roses, fresh as if covered with morning dew, of La France, Paul Neron, Eugene Appert, can be had for a song, or a few sous, which is much the same thing; and, after having feasted the mind to its heart's content, we can go into a restaurant along "La Place" and get a feast for the bodily man that would be good enough for Napoleon were he here and living yet, for about 5 francs. Having seen how the people get their flowers, I will try next and see how the wealthier grow specimen plants. *Paris, August 10th, 1885.*

OUR LADY'S GARDEN.

BY R. A. OAKES.

III.

But, above all other flowers, the Virgin claims the incense of the lily and the rose, types of purity and love. It is said that, when the unmarried men of the lineage of David assembled to woo the Virgin, their rods were placed in the temple, with the understanding that the owner of the rod found budded should be her husband; and that of Joseph alone was found covered with lilies. After her death, the doubting apostle Thomas refused to believe in her ascension; but on the opening of the tomb it was found full of lilies and roses, and, on looking up, Thomas beheld her in her flight to the heavenly hosts, and she threw to him her girdle, to insure his faith.

In the Golden Legend, a lily is said to have grown out of the grave of an ignorant knight, who could only be taught to say Ave Maria. On every leaf was the invocation in letters of gold, and, on opening the grave, the root was found to have grown from the faithful knight's mouth. A similar story is told of an idiot boy of Brittany, who lived under a tree in Auray, and who could never be taught more than the repetition of the words "Ave Maria" and "Salaun is hungry." When he died, the neighbors, thinking him soulless, buried him beneath the tree where he had lived. But the Virgin in rebuke, caused a lily to grow out of the poor boy's grave, every leaf of which was stamped with Ave Maria in letters of gold. A chapel now adorns the place, in which is the shrine of Salaun the Simple, and the idiot boy, as a popular saint, insures tender reverence for those who possess a soul, if not a mind.

From their association with the Virgin, lilies were thought to confer maternity on women, without other aid than the mere eating of them, and a vase of these flowers became the symbol of motherhood. Bede uses them as an emblem of the Virgin's resurrection, the pure white petals sweet as her own spotless body, the golden anthers within typifying her soul, sparkling with divine light. The fourth King of Navarre, in memory of an image of the Virgin found in the heart of a lily, and which cured him of a dangerous disorder, instituted the Order of the Blessed Lady of the Lily. In 1403, Ferdinand of Aragon, in honor of the Virgin, instituted an order of knighthood, called the Order of the Lily, whose badge was a collar composed of these flowers.

Most frequently is the Virgin designated as Santa Maria della Rosa. Dante says:

"—Here is the Rose
Wherein the Word Divine was made incarnate."

She is the Rosa mystica. Old Sir John Mandeville tells the legend of one who had "gathered much goods of his lord's," approaching a wood where thieves were gathered, and as he knelt to say "Our Lady's Saulter," the Virgin came and placed a garland on his head, and "at each Ave she set a rose in the garland that was so bryghte that all the wood shone thereof," and the thieves turned back, leaving him unharmed. In the sixth century, St. Medard, bishop of Noyon, in honor of the Virgin, established the *Fête* de la Rosiere, at which the maiden who was irreproachable was crowned with a chaplet of roses and given a purse of three hundred francs. Interrupted at the Revolution, this beautiful *fête* day was reinstated in 1812, and is still yearly observed. The rosary was instituted with direct reference to the Virgin, St. Dominic having been shown a chaplet of these flowers by the Holy Mother, and in commemoration, real roses were used as corresponding to the joyful, sorrowful, glorious mysteries. In the twelfth century, Isobart, a pious monk, while worshipping at Our Lady's shrine, fell dead, and from his mouth, eyes, and ears roses sprang.

Mediæval art is strewn with flowers from the garden of Our Lady. In pictures of the Annunciation, Gabriel presents the Virgin with the lily, the Fleur de Marie; sometimes the olive is substituted; more rarely the palm. In the Visitation we see her in the garden of Zacharias, where, it is said, she once touched with her finger a scentless flower, and immediately it emitted the most delicious perfume. In the flight to Egypt the palms bent to offer shade to the Mother and Child.

It has been difficult to keep within the borders of Our Lady's Garden; for, outside, are other gardens rich in religious, poetic, and mythic associations; gardens of the Saviour and the Saints; lovely parterres dedicated to Iranian, Egyptian, Greek, Roman, Scandinavian and American deities. In whatever geological age man first appeared, flowers were already blooming to welcome him. The study of primitive culture and folk lore has revealed to us the awe, the honor and the adoration in which the floral world was held; and, though flowers have lost the prestige of the possession of magical powers, the magic of their loveliness will never fade, and, the profounder the intellect of man, the more tenderly will they kindle in him, "thoughts that lie too deep for tears."
—*In Independent.* *Norton, Mass.*

EDITORIAL NOTES.

A MONUMENT TO GENERAL GRANT. — Landscape gardeners contend that their art is equal to any, and are a little sensitive that they seldom receive the homage which the artist in general receives from society. There is no doubt that if an artist is to be born and not made by mere culture or education, as it is so often contended he should be and must be, we may expect to see him cradled in a garden oftener than elsewhere. Unfortunately the artist, though garden-born, forgets his nativity; and when there is a good chance to do honor to his birthright he rarely gives landscape gardening a thought. No wonder society underrates the landscape gardener. Just now the country is exercised over a proper monument to General Grant. It is the theme of many a pen, and every large city is discussing it from many a point of view. We notice eminent landscape gardeners like Vaux having their say with the rest. But no one goes beyond stone or brass, though most admit that nearly all memorials of this kind have been sad failures. They are not truly artistic it is contended. The high art desired by the memorialists is seldom brought to life in the monument. Ugliness reigns where beauty sought a throne. Now if high art is to be claimed by landscape gardening, why not exemplify it by a Grant Memorial Park or public garden, which in real artistic beauty should rival the public gardens of the whole world? Such an idea would be strictly in keeping with the memory of the great name we would perpetuate. Even those who fought, bled, and suffered for the cause that was lost, never believed that it was best that there should be two powerful nations watching each other side by side on this continent. To them it was but a sad alternative that fate seemed to decide for them. Honestly but sadly they struck the blow which eventually crushed themselves. Still, amidst the sorrows which it is unnatural to suppose can yet have wholly passed away, even they rejoice that one great country has been preserved to us and that the standing armies and intolerable burdens that would have had to be borne by the jealousies of two great and neighboring nations, may now be expended in the arts of peace in which gardening has so great a share. We would not to-day enjoy as we are now doing the pleasures which gardening gives us but for the great military talent which kept this country one. Peace could render no greater tribute to war which by its successful ending made the reign of peace possible than that which would be embodied in a memorial garden. The hand of a genius in landscape gardening could make everything tell of the greatness that brought it into existence. The Grant drive should out-grandeur all the other drives; the Grant fountain laugh forth its bubbling waters louder than its sisters; and Grant arches, Grant vases, Grant arbors, and especial Grant gardens in the one great park, all executed with the skill that charms and yet perpetuates, would make the name of Grant a blessing to thousands; while the *Semper perpetua* sought after in the marble quarry or striven for in the foundry would return to earth again long before the garden's death. An anarchial mob threw down the Vendome column, and a few pounds of dynamite from the hands of some insensate may send the Arc de Triomphe in a few moments to the grave of ruin; but no invader, no enemy from within or without, could destroy a garden like that beyond a fair recovery.

But will such a Grant testimonial come? We fear not. As we have said, there seems to be no great artist in landscape gardening at present that

is capable of preserving the dignity and breadth of his own art; at least such seems to be the case; for, as we have sadly said, among all the advocates of art in the question of a Grant memorial not a landscape gardener comes forward to claim a place. The Le Notres, Reptons, Loudons and Downings are no more.

WHERE TO LOCATE.—We were in some doubt about passing R. C. Poppey's paper in our last. It had too personal a tone about it, and yet seemed to be disinterested. We are now sorry we did. Mr. Grove P. Rawson writes from Elmira, that Poppey came to him on trial as a foreman. He was found undesirable, and was given to understand that he was not wanted around. He stayed a few weeks in the town, and Mr. Rawson believes there are some who would like to know where he has gone to. On again reading Poppey's note it is evidently so written as to convey the idea that there are no florists' establishments in Elmira, though he does not absolutely say so. Such was our impression when we passed the note for publication. In reference to this Mr. Rawson says:

"Elmira has seven distinctive florist concerns, and some others who combine market gardening. Four make a living, the others eke out in other ways. I am doing well myself, for I have a good location, have been long established and give satisfaction; besides, am fairly supplied with means. I do not find it difficult to recognize the spite in his article, as he had already hinted it. A new-comer in Elmira would not find the rare inducements referred to, but a competition as sharp and earnest as anywhere."

Mr. Rawson adds to the above some comments in relation to the character of the communication; but we feel that these are needless, for every reader will supply his own epithets much more forcibly than any we dare put into print.

FREE DISTRIBUTION OF SEEDS BY THE GOVERNMENT.—At the third annual meeting of the American Seed Trade Association, held at Rochester, June 9th, 10th, and 11th, 1885, the subject of the free distribution of seeds by the government came up, and Mr. Vick made the remarkable statement that "I know of a firm that sold a quantity of beans to a dealer that he sold to the Government at about six dollars per bushel, the same stock the firm were about throwing away, as they were considered worthless. And I have heard of the European houses laughing many times of the sales they have made to our Government."

It is difficult to see any distinction between the morality of selling seeds known to be worthless, to the Government at high figures, or selling them to private individuals; and, if we had not Mr. Vick's positive statement that he "knew" the firm, we should have promptly resented the imputation as against any honorable member of the seed trade in our country; and we are the more surprised that this statement, and the further one in reference to European houses "many times cheating"—for it is nothing less—the American Government, did not elicit some expression of surprise from the members present. It seems to us that it is due to the respectable members of the seed trade, that more should be known of these transactions, and those either in this or the old world, who have no higher estimate of their moral obligations, marked for reference.

POVERTY WEED.—A correspondent says that under this name is known in Ocean County, New Jersey, the pretty little plant known to botanists as Hudsonia tomentosa. We find by making a frame—a bottomless box—and placing it around this plant, and then filling it up with sand, it is easily cultivated.

RANDOLPH PETERS.—Few men were better known in the nursery trade than Mr. Randolph Peters. He was a man of indomitable energy and perseverance, and amidst many discouragements brought a very small nursery business up to one of large size and extensive reputation, near Wilmington, Del. His death occurred on the 16th of September, in his 63rd year. We have no word of the nature of his illness.

MR. HITCHINGS.—By a note in the *American Florist* briefly stating the fact, we learn, with regret, of the death of this very useful man, whose name is almost a household word with those who have had to do with hot water heating. The simplification of the work of warming, by the introduction of his heaters, had much to do with the great popularity of hot water heating in our country, and his name deserves a record in the history of American gardening.

THE AMERICAN FLORIST.—During the more than quarter of a century of the existence of our magazine, so many horticultural periodicals have been born only to meet early graves, that we heard of this one's entry on the stage of life with the lightest enthusiasm natural under the circumstances. But with Nos. 1 and 2 before us, we feel free to say that this has evidently come to stay. It is a bright, newsy sheet, and deserves the support of all who desire well to the florists' trade.

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

AMERICAN POMOLOGICAL SOCIETY.

Address by Hon. Marshall P. Wilder, at the 20th Session of the American Pomological Society.

With the close of this meeting of our Association, thirty-seven years will have elapsed since its organization. Thanks to the goodness of an overruling Providence, it still lives to dispense its blessings on mankind. Long may it go on prospering and to prosper, while the earth bears a fruit, or man lives to cultivate it.

I have several times tendered my resignation as President, but the Society has as often declined to accept it, and has elected a special officer to occupy the chair when from any cause I might not be able to be present. This action I take to be an expression of feeling that I should still remain with you by official relation, not so much for what I can now do, as for a testimonial of regard for what I have done in the past. So believing, I have the pleasure to address you again.

Happy should I be if I could meet with you, to express personally our gratitude to the Michigan Horticultural Society for its cordial reception, and the ample accommodations it has provided for us; and most happy should I be to exchange congratulations on the continuance of our lives; to rejoice with you in the prosperity of our Association, and to concert measures for its usefulness in advancing the great work that has been committed to our charge; but as this cannot be, I console myself with the hope that you will accept the invitation of the Massachusetts Horticultural Society, and come to Boston in 1887, when I may be permitted to lay off the robes of office with which you have so long honored me, unless, ere that time, I shall have been clothed with the robes of immortality, and gone up to gather celestial fruits, which ripen not in earthly climes.

The work which our Society assumed was great indeed—no less than to compare fruits, and opinions as to the value of the numerous varieties in cultivation; to assist in determining the synonymes by which they were known; to endeavor to abridge, by general consent, the long catalogue of indifferent or worthless sorts then propagated by nurserymen and cultivators; to furnish reliable information in regard to the varieties which succeed in our varied climates; to maintain a spirit of cordial intercourse with kindred institutions—in short, to extend and improve the culture of fruit throughout our land. Thus our Society became the herald and guardian of a new era in the progress of Pomology never before known in this or other lands. It was its mission to lead in this most beneficent work. Most faithfully has it executed this trust, embracing, as it now does in its organization, not only the States and Territories of our Union, but the British provinces on the North, all of which are represented in our institution, thus constituting, as it were, a Continental Association, working together harmoniously for the advancement of the Pomology of the American continent. Most of those who stood as sponsors at the organization of our Society, have exchanged the cultivation of fruits for the culture of the soul in the better land, and we fondly trust are now partaking of those immortal fruits whose bloom was on earth, but whose harvest is eternal in heaven. The Downings, Brincklé, Prince, Buist, James, Ernst, Warder, Walker, French, Cabot, and our Secretaries, Vick, Elliott, and Flagg, have passed on, leaving bright examples of their interest in our Society and the objects it seeks to promote. But, while we thus speak, let us be thankful to the Giver of all Good that some of its founders, who rocked the cradle of its infancy, still live and stand as its god-fathers to this day to receive the thanks of grateful millions. Thomas, Parsons, Hovey, Ellwanger, Barry, Robert Manning, still live to help us carry on our noble work.

IN MEMORIAM.

In reviewing events since our last meeting, I feel that we should most gratefully recognize that Divine Goodness which has preserved the lives of so many of our members to the present time. Some few—only a few—from our large membership have passed away, and only one, so far as we know, of the more than one hundred connected with us by official relations, has departed since our last session, two years ago.

But he whom we could least spare has been taken from us. Charles Downing, our beloved friend, the upright man, and the great pomologist of America, is no more! The loss to our country and cause seems now to be irreparable. But Infinite Wisdom cannot err, and we should be thankful that he has been so long spared to us.

Mr. Downing was born at Newburg, N. Y.,

July 9th, 1802, and died at his home in that city January 18th, 1885. His death is to me a most afflictive event. We were associated together for nearly half a century in efforts to advance the pomology of our country. Succeeding, as he did, his brother, A. J. Downing, whose eulogy it was my sad duty to pronounce thirty-two years ago, he became the editor of the *Fruits and Fruit Trees of America*, all the editions of which have been dedicated to my name from the first. These circumstances have drawn us more and more closely together by the ties of affection and friendly regard.

As a pomologist, he was world-renowned for his knowledge, accuracy, and good judgment, and as such had a longer experience than any other man of whom I have any record in this or any other country. His books will ever be precious memorials of good fruits and good men; of a life whose great object was to make others happy in the enjoyment of the beauties and bounties of creation, and which has been a blessing to our world.

For more than a generation, he edited the *Fruits and Fruit Trees of America*, first written by his brother forty years ago. With the progress and expansion of pomology, this work grew under his hand to such an extent that he might well have claimed to be the author; yet, with characteristic modesty, he preferred to lay his laurels upon his brother's grave. This encyclopædic work, in its many successive editions, is now the authority in regard to the multitude of fruits described in it.

Charles Downing is dead, but his spirit is still with us, and will continue to inspire our souls, and the souls of those who shall succeed us, as long as a love of the beautiful in nature, of rural pleasures and of domestic comfort shall have a place in the heart of mankind. His star has now set, but it has left a golden record which shall illumine the annals of pomology, while the earth shall bring forth the fruits which he so much loved. His works are a rich legacy to the American people, and an enduring monument to his memory.

Although it has not been our custom to refer to the decease of members who had not been officially connected with us, I cannot refrain from expressing the deep regret which has been generally felt on account of the deaths of two of our members who held the highest positions in the Horticultural Societies of Pennsylvania and Massachusetts, whose hospitalities we have several times enjoyed.

Hon. W. L. Schaffer had for seventeen years held the office of President of the Pennsylvania Horticultural Society, and had been still longer in other official positions. He was much devoted to the interests of that Society, and the advancement of our cause.

Hon. Francis B. Hayes was in the fifth year of his Presidency of the Massachusetts Horticultural Society. He was much interested in Horticulture, especially in the introduction of new shrubs and plants for the adornment of his country residence, expending large sums of money for this object, and was one of the largest and most constant contributors to the exhibitions of the Society over which he so ably presided.

Both of these gentlemen were taken from us last year; they will long be remembered for their love of Horticulture, and their labors in promoting it, and will long be mourned, not only by their respective Societies, but by those of this Society who remember them as presiding with dignity and grace at the banquets given to us on our last visits to Boston and Philadelphia.

WHAT OUR SOCIETY HAS ACCOMPLISHED.

When we reflect on the unsettled and chaotic condition of pomology in our country when our Society was established, the narrow limits to which fruit culture was confined, and the few engaged in it, and compare it with the immense territory now occupied for this purpose, and its importance as a great industry of our country, I think it may be well to take a retrospective view and see what our Society has accomplished.

Its formation opened a new era of enterprise in the annals of American Pomology, which has no parallel in those of other lands. It was the first great national pomological society, embracing in its organization the largest area for fruit culture in the world, where almost every fruit of every zone may be grown in perfection.

It has brought into close communion of interest, and concert of action, the most experienced and skilful pomologists of our country; and by its proceedings and publications has furnished examples and methods of work which have been adopted by other pomological and horticultural societies, all working harmoniously together, and thus has become the acknowledged pomological authority of our land.

It is truly an American Society, having, through all the vicissitudes of the past, held in the bonds of friendly intercourse for the promotion of our cause, the North, East, West and the South, and every region where fruits can be grown on this continent.

It has raised the standard of excellence by which our fruits are judged, discouraged the cultivation of inferior sorts, and thus educated the taste of the public for those of better quality, so that kinds once common in our markets have become obsolete, and are now considered unworthy of propagation. In doing this portion of its work it has discarded by general consent more than six hundred varieties, either worthless or superseded by better sorts.

It has established a uniform system of rules, by which fruits are to be shown and judged. But, what is of the highest importance, it has instituted a much needed reform in the nomenclature of fruits, by which all long, unpronounceable, indelicate, inappropriate, and superfluous words are to be suppressed in the dedication of our fruits.

One of the grandest achievements of the Society is its Catalogue of Fruits, published biennially, with isothermal divisions and columns for fifty States, Territories, and districts, in which are recorded the fruits which may successfully be grown in those divisions, with stars to designate the merits and seasons of each. This is a work of great merit, and not attempted by any other society. And here let me say, that we should never forget how large a debt of gratitude we owe to Mr. P. Barry, as Chairman of the General Fruit Committee, for its compilation and classification. He has performed this duty for a long course of years; and fortunate indeed is it that we have, as his successor, his son, Mr. W. C. Barry, who has been so well educated for this duty.

Few things in the history and progress of American Pomology have been more effective in the past and more promising of valuable results in the future than our system of State Reports. They embrace correct information from trustworthy persons, having special reference to the varieties most successfully grown; new kinds worthy of special notice; the chief obstacles to successful fruit culture in each district; and correct information in regard to the extent and progress of fruit culture in each section of our country, and are published under the supervision of the chairman of the General Fruit Committee of our Society, and contain a vast fund of information not elsewhere to be found.

These reports constitute a mine of pomological wealth, and contain not only all the modifications and changes which may have been made in collecting information concerning the culture of fruits, but also in the naming of them, and the synonyms by which they are known; the most desirable varieties being designated in our catalogue by stars, according to their several merits.

I cannot close my remarks on this subject without expressing the very great interest I feel in continuing this most important branch of our researches through generations to come, so that for all time we may have a system for the advancement of pomology, which shall be worthy of our nation and the great interests we represent. Had it done nothing else, this alone would entitle our Society to the universal approval which it now receives, and the gratitude of the generations which are to succeed us.

Before the organization of the Society, while we had around us, an immense region ready for the cultivation of the finest fruits, great confusion prevailed in nomenclature, and the difference between good and bad sorts was very dimly appreciated. At that time, pomologists experienced great difficulty in obtaining varieties true to name; and sometimes, after repeatedly procuring fruits, and losing years in waiting for them to bear, found themselves where they started. The American Pomological Society has performed an immense labor through its meetings and its committees, in correcting this confusion, and it is wonderful to contrast the early condition of pomology with its present mature state. Its future labor will be continuous and of vital moment, in introducing new and valuable varieties; and what will be of the greatest importance, maintaining an accurate nomenclature. It will inform fruit-growers, in every State and Territory, what fruits they are to look to for successful culture. But most important of all, its business will be to give American Pomology a high character as a science; to prevent the appearance of mere money-making and petty attempts to impart undue prominence to new favorites by laudatory names. The continued aim of the Society will be to maintain a position of dignity, integrity, and impartial usefulness.

To record all the good the American Pomological Society has accomplished would be equivalent to writing the history of American Pomology during the period of the Society's existence. Its proceedings are not only a record of the events of the time, but they clearly show that the Society has been pre-eminently instrumental in shaping and directing the pomological destinies of our continent. It has organized and systematized everything pertaining to fruit culture, and has developed and elevated American Pomology. The Fruit Catalogue is a grand and glorious work, but far greater is the educational and refining influence which the Society exerts over its members. No one—unless he be irredeemably

depraved,—could attend its meetings without becoming not only a better pomologist, but also a better man and Christian.

The work which our Society assumed was immense. It required a great Society to carry it on. A great amount of time, labor, and treasure has been expended in bringing it to its present flourishing condition; but however great the labors performed, and the sacrifices made in behalf of our Society, not one regrets them, but all rejoice that they have had a share in promoting a work so beneficent in its design, and in perpetuating it for the comfort and happiness of mankind.

That the Society's mission for the future will be not less beneficial is hardly to be doubted, built upon so solid a foundation as it is. It will continue and complete the reform in nomenclature just commenced. As the laws that govern cross-fertilization become better and better understood, it is not improbable that the most desirable types and strains of fruits will become more firmly established, resulting in the diminution of the number of varieties, and the perpetuation of only those best adapted to our various climates and soils. The special aim of the Society should be to enlist in its active membership all the best elements of our country, and to form, as far as possible, a closer relation with all existing State Pomological or Fruit Growers' Societies.

(To be concluded in next issue.)

FLORISTS' CONVENTION NOTES.

BY EDWIN LONSDALE.

I.

Philadelphia is selected for the next convention.

Mr. C. L. Allen, of Garden City, N. Y., said that plants reason, think and feel.

Mr. Robert Craig, of Philadelphia, wonders what the rose Andre Schwartz thought when the florists who were so unfortunate as to have it on their hands were frowning on it.

Mr. Charles Henderson, Jersey City Heights, says that the dormant rose plants received from Georgia last autumn did not prove satisfactory, most of them dying during the winter after being potted. The cause was the unripe condition of the wood. If a position could be selected and secured where the soil is comparatively dry and poor, and the same success attend the rooting of the cuttings in the latter case as in the former, and the ripening process be thoroughly accomplished, there would be a lucrative rose trade diverted from Europe to our own sunny South.

Mr. Robert Craig, of Philadelphia, says there is no question about the superiority of the Bennett over any other red rose, and it will eventually, and that very soon, supersede the Duke, Pierre Guillott and Jacqueminot.

Mr. Robert J. Halliday, of Baltimore, says he will admit that Bennett is a good rose, but when the Duke is handled right he wants nothing better.

Mr. Walter W. Coles, Claymont, Del., declares that the Duke paid him better last winter than any other rose that he grew; that is, he realized more money from a given space planted with the Duke than from the same amount of space planted with any other variety. Mr. Coles' plan of growing the Duke is to give it lighter soil than is used generally for other varieties, and it should contain at least one-half manure. Temperature is an important factor in the production of good Dukes; 10° higher at night than is generally used for such as Catherine Mermets, may be advantageous.

Mr. John Burton, Chestnut Hill, Philada., is of the opinion that steam possesses no advantages over a well constructed hot-water apparatus for heating greenhouses. With him there is no difference in the consumption of fuel, and if his advice were solicited as to which was the best system to use in a large new range of houses the toss up of a penny would decide the question.

A. B. Fowler, of Exeter, N. H., says, "Heads! steam wins; tails! water loses. When steam is not more economical than water for heating greenhouses, all other things being equal, the trouble is generally found to be in the draft."

The painting by Mrs. Duffield of the rose Her Majesty was flashed on the convention by Mr. May at the conclusion of his practical and excellent essay on "The Rose," and it created a sensation. This rose may be described as enormous in size, excellent in form, and pleasing in color.

Mr. John Henderson, who it is reported had said on a former occasion, that he had been well repaid for his trip to London after seeing blooms of Her Majesty, said here that the picture did not do the rose justice (this the distinguished artist admits herself), for, said Mr. H., the coloring is somewhat defective, being too dark, and the purple shading at the lower part of the flower has no place in the rose itself. Such unstinted praise as this distinguished rosarian bestows on Her Majesty places it beyond a doubt as the foremost rose of any age, and one that has undoubtedly come to stay. From its extraordinary strong growth, no person would suspect its origin. It is a cross between Mabel Morrison and Tea Canori. The disseminators would be justified, from its

breeding, to class it amongst the Hybrid Teas, but it would not be policy to do so, because so far it does not partake of the same characteristics as the Hybrid Teas, with the exception of the glossy bright appearance of the leaves. If it takes kindly to this climate, and there is no reason to believe it will not, every professional or amateur with enough ground must have one of his own.

Amongst the most pleasant things to be remembered in connection with the convention held in Cincinnati, the one that will live longest in memory, will be the testimonial present made to President John Thorpe by his many friends. It is to him that the society owes its existence, and the small token is to make some recompense to show their gratitude for his efforts.

THE INTERNATIONAL EXPOSITION AT ANTWERP, BELGIUM.

BY M. H. LESTER.

One franc is the price of admission to the Exposition. To-day, another franc is charged—inside—for admission to the Horticultural Department. It is arranged about as any other first-class Exposition. Specimen Palms at the back around the hall, on stilts, to accommodate the height of the building, and groups on the floor. Palms are as seen in all first-class collections. Astrocaryum, Areca, Chamærops, Livistonia, Pritchardia, Kentia, Phœnix, Luculla, Thrynax, and several others are represented in good size specimens. I think there are larger specimens in the United States of Pritchardia grandis, that any I have seen here.

The first prize for twelve Crotons was awarded to large and well colored specimens of the following: Johannis, Magnifolia, Andreanum, B. Rothschild, Mortii, Rosea picta, Messangeana, Fascination, Baron F. Seilleur, Ovæfolium, Tortilis, with Philodendron crassifolium on it for a label. The second prize was awarded to a collection of smaller plants, also well grown and colored, in which not one of the above names occurred.

The first prize for a collection of Orchids, 12 in number, was awarded to the following: Ærides Dayana, Cattleya Mendelii, Cypripedium barbatum superbum,—a large piece with about 30 blooms, Vanda suavis Veitchii, Vanda suavis Lindenii, Odontoglossum Alexandra, Oncidium superbiens, Cattleya Gaskelliana, Epidendrum vitellinum, Vanda tricolor insignis, Calanthe veratrifolia and Miriaspidium sanguineum. The first prize for a specimen Orchid went to a ragged looking piece of Dendrobium thrysiflorum with 5 spikes, a good deal past its best.

First prize for twelve Nepenthes went to the following: Ampulacea, Hookeriana, Morganæ, Stewartii, Lævis, Veitchii, intermedia, Masterii, some of the pitchers of which would hold a quart, Sanguinea, Maculata, Chelsoni, and Dominiana, all well grown and pitchered.

I think there are two first-prize collections of Gloxinias and well they deserved it. You see one can not find out anything, no one here speaking English. Carnations, etc., in pots, were well done, as were cut blooms, nicely exhibited with their own grass; and otherwise were very creditable, until one came to a collection of, I think, 36 varieties of Flakes and Bizarres from Chas. Turner, the Royal Nurseries, Slough, England, which knocked everything of that description in the Exposition higher than the old fashioned "cocked hat" used to be.

I noticed some large pieces of flowering Anthuriums, some with 100 flowers I think, but I did not see A. feriense, or A. Rothschildianum among them. A large piece of A. crystallinium, and another of A. Warocquianum were grown one-sided, but there was a famous piece of A. Veitchii with over 30 leaves, some more than 3 feet long.

Among other Orchids in bloom, I noticed Acineta Humboltii, Dendrobium formosum giganteum, Phalænopsis amabilis, Lælia majalis, Cattleya Loddigesii, Cattleya Gigas, Phajus Humboltii, Vanda suavis Rollinsii, Anguloa Ruckerii, Saccolabium Blumei, Batemania meleagris, Disa grandiflora, Cattleya Sanderiana, Cattleya Leopoldii, Anguloa Clowesii, Vanda Walltichii and several others.

It would make this too long to mention all the plants worthy of notice, but I will mention a few. Cochliostema Jacobiana, a large piece, was well bloomed, also Medinilla magnifica, and a good balloon shaped piece of Lapageria alba in a 16-inch pot. Caladiums are dull in color to me, as I have grown some of the same varieties for the past two years at New Orleans (received from here), Rex Begonias also. I have seen better plants of Louis Cretein than were in any collection here. Double Petunias in pots are fine, also Geraniums; but large specimens are in tubs, enough for four men to carry.

Tree and other ferns are well represented, and some splendid collections and specimens are on exhibition, and a nice little case of Aneoctochilis and another of Bertolonias from Louis Van Houtte. *Antwerp, Belgium, August 2, 1885.*

APPARENTLY DIFFERENT IDEAS AMONGST BUSINESS MEN.

BY J. E. W.

"But if it is to be a grand collection of ordinary merchandise, a bazaar, a mere mart where the people are to be brought together to buy and to sell, a mere question of ordinary 'business,' as our correspondent puts it, the average man will not send. He can make more money by spending the amount of cost in personal effort in his own office, with the ordinary advertising machinery."

Rather strongly put—"A mere mart where people are simply brought together to buy and to sell." I think it is the usual idea that persons who make exhibits at grand exhibitions strive to exhibit something better than "ordinary merchandise." The average man who has nothing better, of course will not exhibit, or should not. A few words as to the business idea of the Exposition that is now passed. The greater portion of the exhibitors, numbering several thousand, occupied the Main Building, the Machinery Annex, the Furniture Annex, etc. They fitted up their spaces in good style and exhibiting their best goods. They came provided with plenty of advertising material, circulars, catalogues and cards of endless devices. They and their assistants industriously talked business on every appropriate occasion, tons of advertising material were put afloat as occasion offered. Here were dealers in every kind of machinery, agricultural implements, furniture, carriages, pianos, and almost everything from a stove to a locomotive. What did these shrewd business men congregate here for? Merely to make a grand show and get a premium? I think it is fair to presume that these business men all understood the value of the "ordinary advertising machinery" and had used it. That is the action of the great majority after having tried the Exposition instead of the ordinary advertising machinery? They leave their stalls intact with the assurance that they will return in the fall with greatly improved exhibitions. Many of them have applied for increased space—some even quadrupled. All are enthusiastic over the Exposition that is passed and are anxious for the continuance.

Our neighbors of Central and South America, and of the Islands, are to be invited here with their wares and merchandise. And it seems that business is the idea; or trade, if you like that word better. Now if these business men propose to continue this method of advertising instead of the old ordinary one, why should not some of our shrewd business florists and horticulturists try the same thing? Those who have nothing and can get nothing but ordinary merchandise probably will think it will pay to come; and those who want no business with the New South or to extend their business with the big crowd that is certain to be here, will hardly come. But I still feel, as I expressed myself in my letter of June 1st, that there will be found brave, daring business men amongst the horticulturists and florists who will be with us the coming fall with their best shows, and go for business. Come provided with plenty of advertising material and use it as proper occasions shall offer. I certainly will be disappointed if it shall result that the horticulturists and florists are the only business men who are not ready to take advantage of an opportunity such as the North, Central and South American Exposition promises to be. There are shrewd business men amongst the horticulturists as well as amongst other departments of business. I feel the results will show this to be so. *New Orleans, July 13th.*

[We still think our excellent friend has not yet fully taken in what we would desire. He has no other interest in this matter than a warm public spirit which desires the complete success of the exhibition. It is not a dollar in his pocket whether it succeeds or fails; but he has a proper pride in what it is and ought to be. This is exactly our position. The only difference between him and ourselves is this. He notes that a very large number of first-class firms were not represented at the exhibition. He could not understand why? We attempted to explain why? But our correspondent does not seem to think this can be the real reason.

All that we can say is that if any one has any better reason to offer, our columns are freely open for their views. Anything that we can do to aid in making the proposed exhibition a grand success, it is our earnest desire to do.—Ed. G. M.]

EDITORIAL NOTES.

AMERICAN POMOLOGICAL SOCIETY.—We learn as we go to press that the session at Grand Rapids was one of the most successful ever held by the society, and gives renewed evidence of long life and usefulness. Marshall P. Wilder was re-elected President; P, Barry, Vice President, and B. Smith, Treasurer. Mr. C. Garfield was elected Secretary. There were 4,000 dishes of fruit. The essays and discussions were of a much higher order of interest than usual. Three of the original founders of the Society—Barry, Ellwanger, and Manning—were present. The next meeting will be held in Boston.

THE FLORISTS' CONVENTION AT CHICAGO.—"Your correspondent who reported the doings of the Cincinnati Meeting of the Society of American Florists, made several errors, one of which should be corrected. It is true that Mayor Probasco extended an invitation to all present, to visit his beautiful grounds, and many took advantage of his kind offer. But the "third day" was spent by the delegates at the Soldiers Home in Dayton, through the kindness of the C. H. & D. R. R., which corporation placed at their disposal a special train free. Since the GARDENERS' MONTHLY has devoted over a column to an account of the meeting, it seems but just and fair that the generosity of the C. H. and D. R. R., should be mentioned. In this case it was proved that corporations do have souls, the old adage to the contrary notwithstanding. Yours Respectfully,

"WILLIAM J. STEWART."

THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXVII. NOVEMBER, 1885. NUMBER 323.

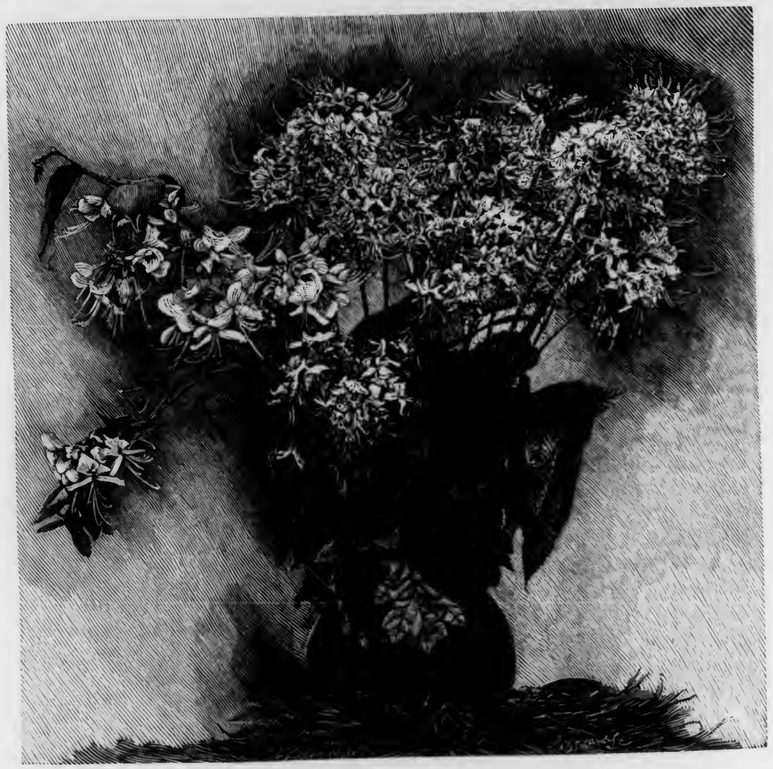
FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Gardening would be more nearly an echo of paradise than it is now, only for the annoyances caused by insect foes. The red spider is a terrible pest, and the past season it has been more than usually destructive. The evergreen box is a great favorite with this little vixen, and only for this the Box in its many varied forms would be one of the most popular ornaments of our gardens. Then many coniferous trees, more particularly the White and Black Spruces and the Siberian Fir, seem particularly attractive to them, and of late years they seem to have discovered that a dose of Arbor Vitæ is not bad to take. They are so very small that they can scarcely be seen without a pocket lens, but their existence may always be known by a brownish tint to the tree in summer time; and on a dewy morning by the dense cobweb which is then made apparent like a silk net-work over the whole tree or bush. From this web-weaving power, and we suppose from some other anatomical characters they are classed with the Arachnideæ, or Spider family; but while spiders generally are carnivorous, these little wretches are suctorial, and live on the juices of the tree. Spiders usually make webs to catch insects—just what these creatures make webs for, that eat no flesh nor drink blood, nor have anything to do but suck the pleasant juices of our petted plants is not clear. But we are getting too much out into wild nature for "practical hints," where people want to know what to do, than to get merely moral lessons. Fortunately red spider cannot catch on well, and a powerful syringe or garden engine will soon clear a bush or small tree of them. They thrive during hot weather simply because there are no rains to knock them off. As they suck only, poisons will not reach them. But when we have to deal with insects that eat, such as the Elm-leaf Beetle, Potato Beetle, or caterpillars such as the Measuring or Canker Worm, a syringing or engineing with water in which Paris Green has been dissolved, will do the destructive work effectually. But very often it is much easier to gather by hand than to worry over poisons or mixtures. This is particularly the case with the drop-worm, basket worm, or, if we prefer the genuine name given by the entomological men of science, Thryriodopteryx ephemeræformis. A boy will clear one's whole place of them in a day, and a second picking will gather in the few missed on the first venture. These curious creatures that commence to build a house over themselves when they are born, and die in the house they build—the house that is at once their cradle and their grave—are very common on Arbor Vitæs and other coniferous trees. They kill the trees if not taken off early, for no tree suffers by the loss of its leaves like an evergreen. Yet it is no uncommon thing to find gardeners with

great pretensions to knowing everything—so knowing that they do not even read a horticultural magazine—with valuable evergreens totally destroyed by reason of neglect in picking the bag worms off.

At this season of the year one may watch trees or shrubs in the woods for peculiarities in habit or growth, and get cuttings or grafts for propagating. This is especially the case with weeping or fastigiate trees. Almost all the curiosities we have of this character, have been found wild originally by some acute observer. They are not the results of the skill of the florist, but of nature's own unaided love of variation. Very few persons have any idea of the great range there is to natural variation till they begin to look for them. Annexed we give an illustration of a variation in the common Wood Honeysuckle, Azalea nudiflora, from a photograph furnished us by Mr. Lorin Blodget. The specimens were gathered in a piece of open woodland near Media, Pennsylvania, on the 25th of May last. The form with the few large flowers is common enough, but the smaller with the immense number of flowers in the head, would gladden the heart of an enthusiastic florist to come across, and would no doubt be very popular under cultivation.



Azalea nudiflora.

We still see occasionally advice not to have anything to do with planting large trees, not to touch anything over five or six feet high, or thicker than broom handles. This advice smells somewhat musty. A tree twenty feet high and a foot in circumference will grow just as well as a small tree, providing it is vigorous, healthy, and has been several times transplanted before, so that it can be taken up at small expense, and with a reasonable chance of getting most of its roots out safely. It is pitiful to pass places just "finished" with nothing but little saplings scattered about, under the impression that larger trees would not grow or do well.

Now we go into details, as most chapters on "work for the month" do. For instance, we might say it is now so well understood that we may have an immense addition to our list of hardy evergreens, if we will only shelter them, that we expect all those who love these varied winter favorites will take measures this season to plant shelter belts in exposed places, or else to set the common hardy trees like Norway and Hemlock Spruce, and Scotch, Austrian and White Pines thickly about, so that the rarer ones can be put between them. Almost all young trees are tenderer than they are when older. It is therefore no test of the hardiness of some rare thing, that a small plant is killed in the winter. Silver Firs almost always get killed back for a few years in this section, unless protected, but yet gain a little in strength. After they are ten years old they will endure our hardest weather. So Spanish Chestnuts, English Walnuts, and many others will die back considerably, until they get strength. Therefore, protect any valued young plant, if possible, no matter how hardy its reputation may be. We have said this before, but it is well to repeat accasionally general practical advice given in former chapters.

Nice smooth lawns are great attractions. If not level and smooth, earth may be filled in the hollow places at this season, and raked smooth and level. If not over two or three inches deep, the grass beneath will come through and make a sod before next summer; but, if deeper, a little grass seed may be sown.

In treating hedges of Osage, Honey Locust, or other deciduous plants, we like the plan of letting them grow as they will for two or three years, and then, when the stems are a couple of inches thick, saw to the ground. A mass of strong sprouts then pushes up, which can be pruned into shape the next summer. Where hedges are to be thus made, or older ones have been neglected, they can be cut down to the ground any time in the fall or winter season. It seems that in spite of all that has been said, Osage Orange and Honey Locust are the best plants for farm fences, or where any very strong fence is desired. Berberry, Silver Thorn, and Pyrus japonica are the next best—indeed, except that it takes rather longer to make a good fence, the last-named would be as good as the two first in all except cheapness. An extensive travel, however, teaches us that even Osage and Honey Locust are seldom successful as a protective fence, without great care, knowledge, and considerable expense. But the combination of wire and Osage, or Honey Locust, is all that can be desired. It need not be expensive barbed-wire. Any light posts, with two or three strands of wire—the posts simply strong enough to hold the wire two or three years, till the hedge grows up—is all that is required. When the posts rot away the growing hedge keeps the wires in place. Any sort of hacking of the hedge once a year, so as to keep it in bounds, will then make a thoroughly hog proof, or thief-proof fence.

COMMUNICATIONS.

TOBACCO STEMS AND ASHES.

BY ERNEST WALKER.

I find tobacco stems placed about the root of a peach tree answer three important purposes, viz: that of a good mulch, destroy the borer, and answer the object of a splendid fertilizer.

Wood ashes also destroys the borer, and is an excellent fertilizer, supplying that important principle in plant growth—potash—of which the peach requires a considerable quantity.

The unusual thrift and health of our currant bushes and their exemption from the currant worm, prove wood and coal ashes to be also a useful fertilizer for them as well as the peach.

New Albany, Ind., July 23d, 1885.

[When our correspondent writes that wood ashes destroys the borer, we understand him to mean that the borer dislikes to work where wood ashes are.—Ed. G. M.]

NICOTIANA AFFINIS—A NEW ANNUAL.

BY N. ROBERTSON.

Nicotiana affinis is certainly one of the grand novelties amongst new introductions. I always speak of things as I find them. I made a bed of it with some fears of what it might turn out, judging from the nature of the species that it would make rather a rough one, and its appearance in its early stages surely indicated that. But when it comes into flower all such notions get dispelled, for I know no other plant that makes a more unique and beautiful display of white than this does; and the sweet perfume that impregnates the air for a long distance is most refreshing. Its appearance in the day time, when the sun is strong, is rather dilapidated. It closes its flowers in such a manner as no one could ever think revivable again; but when the evening comes it shines forth in all its glory. In dull days it does

not close up to a great extent, and possibly if it were planted in a shady position it would have its open flowers all the time. Its duration of bloom is long. Mine commenced to flower in the middle of June, and now this morning (a dull one), on the 13th of August, it is still in glory and no appearance of giving out. It will have to be remembered that it could only be used in a very large bed or border, as its height, at least two feet, makes it fit for nothing else. There is no plant that can be easier grown; but a grub is extremely fond of it in the early stages. Any one using it the coming season will be delighted with it I feel satisfied. *Supt. Gov't Grounds, Can.*

EUPHORBIAS FOR EMBANKMENTS.

BY M. D.

For the railroad embankment I will recommend Euphorbia Cyparissias. Near Mumford, Western New York, I saw a spread of it, the which covered an area of ten feet square, or more.

It had evidently started upon level ground on one side of a shallow railroad cutting, and thence extended over and down the incline, composed of yellow infertile soil.

It is a pretty, gray, level-topped thing, needing little or no care. It ceases its upward growth at eight or ten inches, and at that point maintains its fresh looks the summer through.

As a companion plant for this, I would suggest the annual, and weaker, E. peplus, with pale, but not gray, green leaves, and growing erect to ten inches, usually ceasing, however, at a less height. Though not a common plant, I have found it at several points here in Rochester. Apparently it loves the shade, but "Gray's Manual" does not so state. In one instance I discovered a large yard almost filled with it, the plant, and the ground in which it grew, having doubtless been undisturbed for a considerable length of time. *Rochester, N. Y.*

PLANTING TUBEROSE SETS FOR SETS AND BULBS.

BY MRS. J. S. R. THOMSON.

I noticed with great interest the article of Ernest Walker in October number, page 297, on "Propagating from Blindwood," especially that point made. The difference in time cuttings took to bloom. My experience is his exactly, and I was meditating this article when his confirmed me in my determination to write it. This spring I ventured to experiment in raising tuberoses by field culture, hoping to be benefited in many ways—lost health regained; developing one more resource to the South; and last but not least, a liberal amount of pin money. I went into it heart and soul and purchased from two sources sets to plant. I took that admirable work of Peter Henderson as my sole guide, "Garden and Farm Topics," and went in all things by rules laid down in it.

"Experience is a good teacher," and being a close and interested observer of this (to me) untrod field I took careful note of the experiment, and to-day I feel I am so much richer for it, I want to tell my observation and see if I am correct. One party who furnished me with sets sent them very small indeed, not larger or longer than a snap bean, whilst the other sent them full as large as my fourth finger, or size of groundnut. The first I planted with many misgivings, only faintly hoping for bulbs large enough to offer in sale; second or largest I felt sure would be all my heart could desire. With good seasons and liberal culture, September 29th and 30th saw my bulbs all harvested, 30,000 of them, and I am astonished at the result.

I naturally supposed that the larger sets would produce the larger bulbs, and vice versa, the small planted, only a moderate-sized one—but I am compelled to tell the truth, I see no material difference in them on an average. The small sets have produced the most uniform bulbs, and in many cases a superior sized one, but with this great distinctive difference:—the largest sets planted are crowded with many young sets, many of them almost as large as parent set; whilst the small ones used are only sparsely furnished and those are small compared to the parent or central bulb. In fact it is sometimes difficult to distinguish bulbs from sets, they are so near same size; whilst in the small set the central bulb is bold and exceedingly well-formed. Hence, I draw this conclusion:—that the large set had so far perfected its growth, that soon after it was planted it not only began to develop size, but to reproduce itself in sets; whilst the small one had to go on and develop to full maturity before it could produce sets. In consequence, the set had most of the nourishment to the full development of those fine bulbs, whilst the others had it only in part, the many sets around them absorbing their full share. Herein lies the good of experience. One growing bulbs, alone for their size, I think should use extra small sets with most liberal culture; whilst those wishing both good bulbs and many sets, should make use of those farther developed, and with liberal culture. I watched anxiously to see if the larger sets used would flower ere desired, and was gratified by only 20 out of 30,000 planted doing so. A few bloomed single, whilst sets were sold me as double Pearl and Italienne. *Spartanburg, S. C.*

[These suggestions are undoubtedly correct. Horticulturists have long since found that a small onion set makes a better bulb than a large one; and the same law would apply here. But no one has demonstrated this so well as Mrs. Thomson in the above communication.—Ed. G. M.]

ROSES GROWN IN GEORGIA.

BY A. OELSCHIG.

In the October number of the GARDENERS' MONTHLY, under "Florists' Convention Notes," Mr. Charles Henderson is reported as saying, that the dormant rose plants which he received from Georgia last autumn did not prove satisfactory; and further as the cause, the unripe condition of the wood.

The writer of this is not master of the English, and not able to reply in such a manner as he could do in his native language, but he will try to make himself understood by the readers of your worthy paper.

That the roses die during the winter, after being potted, must be owing to some other cause than unripe condition; and if they die it must be the fault of the grower, or his assistants. This will be clear from the following facts.

The time we make our cuttings is from December to the latter part of January. Plants from these cuttings will be in bloom about the end of April or May, according to the weather. From this time they will make their second strong growth to about July, which is the time the perpetual bloomers are over their second flowering condition. The third series of shoots they send up discontinue to grow by September. The plants at that time have an average of from four to eight branches—some varieties as many as twelve and more—and an average height of five feet. They grow no more after this, and so we are sure that this wood is "ripe." There can be no question about this. They are absolutely at rest till the first part of December, when the frost kills the leaves and the shipping commences.

The rose plant itself, however, is not done growing after finishing the third growth, as other shoots come up from the bottom and bloom. Now (Oct. 4th) the plants look just as vigorous as in Northern States in July. They send up new shoots again, which will be in bloom the latter part of this month (Oct.); and if we have early frost, most of the wood of even the last growth will reach maturity before December; and if not, there is no harm done to the plants if the whole last growth is cut off. There is plenty of mature wood, and the plants would be large enough for any florist—in fact, too large, yet, to bring them in pots, with the exception of a few kinds.

It is to reduce bulk in packing that they are trimmed, and not because of unripe wood. If any ripe wood was cut out, as Mr. Chas. Henderson complains, he may be sure that the grower did it for cuttings, or that some of the workmen did it in ignorance.

It would be unjust to the growing industry here to condemn the Georgia-grown roses after a solitary failure, unless an undisputed reason would be given. Our firm has not received a complaint yet on account of unripe condition, from any quarter. To settle the question we make the following proposition: Next season we will send to Mr. Chas. Henderson, or any competent florist who may be satisfactory to him, a quantity of plants—say one hundred and twenty varieties, containing Hybrids, Moss and Prairies—to start them in pots and give them a fair trial. The result should be published in the GARDENERS' MONTHLY, and the proceeds which may be obtained through auction or private sale should go to the treasury of the American Florists' Association.

We would be glad to hear about this matter in the next number. *Savannah, Ga.*

SEDUMS IN ORNAMENTAL GARDENING.

BY M. D.

The Sedums were made for the gardener. Knowing their colors and the height each attains in a season's growth, he may lay out a perfect garden at the start, never needing afterward to approach it with shears or knife. I have frequently thought that the plants of this genus were especially suited for growth in the near neighborhood of houses of the Queen Anne type. The dull colors or grays of the one would nicely blend with the equally dull colors of the other. Many species should be used, and they should not be formally grouped, but brought together picturesquely.

With persons recognized as possessing good taste, I think the tendency is toward toned-down flowers and flowering plants, as well as toward

non-irritating house exteriors. If bright colors are to be used in the future garden, their sharp effects will be neutralized, or smothered, in a mass of abutting grayness or greenness.

Nature is seldom loud. When it is, it is so universally so that it is not to be distinguished from stillness, for it removes all contrasting things. Snow may be called loud, but when it falls upon the earth, and the things that cover the earth, all antagonisms are drowned to view. Green might be called loud—it is certainly strong—but its high tone is lost in its presence everywhere.

Rochester, N. Y.

LOBELIA CARDINALIS.

BY W. F. BASSETT.

This is one of the most showy plants we grow, and we find it very easy to handle. When one has a wet corner to plant in, it will require no care except planting; but we take either the small offsets that grow at the base of flowering plants or sow seed as soon as ripe in summer and pot in very small pots and keep in the shade, taking care not to let them suffer for want of water. These can be wintered under the benches by being plunged in the ground and carefully covered with brush or coarse mulch. In spring, after they get well started, we transfer to 5-inch pots and place on the north side of a building, and always keep thoroughly watered. It is surprising to see what a large plant will be produced from a little offset in this way, and one will be in bloom several weeks. *Hammonton, N. J.*

EDITORIAL NOTES.

THE JAPAN SNOWBALL.—The misfortune of common names is, as we have often suggested, that no one feels bound to adopt a name already common to a plant, but feels privileged to give it another name or as many names as he likes. In this country the great merits of the Viburnum plicatum as an ornamental plant have been some time known, and it is being planted everywhere as the Japan Snowball. In England they are only just beginning to appreciate its great merits, and getting "to run" on it. They think it time it went by a common name. One would think that a name already adopted by millions of people speaking their own tongue, would be "common" enough in all conscience, and that Japan Snowball would be good enough under the circumstances. But we see that it is to have a wholly new common name, and it has recently been christened "the Chinese Guelder Rose."

Guelder Rose, we are informed is from its "Rose-like balls," and it was originally introduced into England from Gueldres, in France. It was a brilliant fancy that saw much like roses in a bunch of Snowballs.

EVERGREEN HEDGES FOR THE SOUTH.—While Northern gardens pride themselves on the beautiful hedges made by the Hemlock Spruce, or Arbor Vitæ, Southern gardens revel in beauty by the wealth of broad-leaved evergreens which they can use for the purpose. Imagine a hedge of Cape Jasmine with its fragrant blossoms, or of the beautiful shining green leaved, Japan Euonymus. Then the Chinese privet makes one of the grandest of hedges. Some people use the Chinese tea plant for hedges, and find it does admirably. They may use the clippings to keep down the grocer's bill, for anything we know. The tree box is often used, and we believe a number of other things. There is nothing adds so much to the interest of a garden as well kept hedges in appropriate places, and the South is to be envied for the great choice it can have among so much pleasing variety.

THE BEAUTY OF OAKS.—It is conceded that on a variety of points being considered no class of tree has so many good ones as the oak. They are growing in favor with ornamental planters. So far the English Royal oak has had the palm for beauty of acorn, at least the peduncled or stalked form of acorn, for there is one that has no stalk to the acorn. But we think the American Chestnut oak, Quercus Prinus, is quite as interesting in this respect. It is in many respects a beautiful oak, and planters are fond of it.

SCRAPS AND QUERIES.

RED-FLOWERED ELDER.—A correspondent notes that a friend riding about Crystal Springs, Yates Co., N. Y, noticed Elder flowers quite pink. The red-berry Elder sometimes has flowers shaded with pink, and it may be some would come very dark. It would be worth while for some one living in the vicinity to select and cultivate the darkest cases.

HARDINESS OF ALSTRŒMERIA.—"M. M.," St. Paul, Minn., asks: "Will you kindly give me information in the next number of the GARDENERS' MONTHLY as to whether Alstrœmeria Errembaultii and Fritillaria præcox alba are hardy here? They

are so catalogued by a Holland firm. Any information in regard to their culture, time of planting, &c., will be gratefully appreciated."

[The Alstrœmerias are not very hardy. The Fritillaria is regarded by some as but a white variety of the common F. meleagris of Europe. Though somewhat hardy, we should not consider it safe to regard them as hardy in Minneapolis.—Ed. G. M.]

CALLICARPA AMERICANA.—"W. F. H.," Huntsville, Ala., writes: "I take the liberty of sending the fruit and leaves of a very showy plant common here on the hillsides and open places in the forests; but mostly confined to the mountain and hillsides, I believe. It grows to the height of from 3 to 5 feet, of bush form, with open head. It stands here perfectly hardy when the thermometer sometimes shows 10° below zero. I wonder not to have seen it introduced North. I will be glad to know its name."

[The Editor has gathered this abundantly along the line of the Black River in Mississippi, which shows that it is as common in low as in high land. The pinky-purple berries are very attractive; but a similar one from Japan—Callicarpa purpurea—common in Northern gardens, seems hardier, and has a prettier habit of growth. This is the plant originally named Johnsonia, in honor of the editor of the third edition of "Gerard's Herbal."—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

The recent sale of the late Mrs. Morgan's Orchids has been the theme of so many articles in the daily papers, that people who do not even know that such a magazine as the GARDENERS' MONTHLY is in existence, have been brought to inquire about them. This collection was estimated to be worth $200,000, and brought at the sale about $45,000. Considering how comparatively few people know of their worth and beauty in our country, even this figure is very good, though it must be said that most of the best bargains, Vanda Sanderiana for $750, for instance, were bought by English people to send back again to England from whence they originally came. It takes a lifetime to grow a large specimen, or a small fortune to send to the tropics to search for and successfully get a large specimen; and aside from the unique beauty and fragrance of an orchid, they have an intrinsic money value wholly independent of mere "fancy" in the price. The publicity given to the sale will however undoubtedly lead to a greatly increased culture of these beautiful plants.

There has been a great deal said about steam heating in our columns of late. It might seem, on the first thought, that this was only of interest to commercial florists who desire to erect houses on a large scale. But it was our conviction that indirectly the matter was of interest to all who loved winter flowers; whether in rooms or small greenhouses. Many large dwellings are now heated by steam, and where this is the case, a branch to the small conservatory or plant window solves the whole difficulty about heating these cosy little places. Besides, many people now prefer to buy cut flowers rather than grow them themselves, and hence if the perfection of steam heating will reduce the cost of raising flowers it becomes a question of interest to everybody.

There will still be many who want windows and small plant houses heated for plants, who have no chance to do it by steam. These will yet have to depend on the ordinary cellar heaters; or, if these cannot be had, wood stoves or other contrivances. As a rule, coal oil stoves are the best. Shutters, outside or inside, which keep in the heat, are often as valuable as inside methods of supplying heat which is lost.

Again, it is wise to attempt to grow in these places only such plants as require little heat. The old camellia and azalea are still among the best for small greenhouses.

Greenhouses attached to dwellings were formerly called conservatories. They were used simply to keep plants in bloom, not to grow them. After blooming they were sent back to the greenhouse, or to the florist where they came from. But of late years small greenhouses attached to dwellings are called conservatories, whether the plants are grown as well as flowered or not.

Pot culture, whether in rooms or greenhouses, depends, in a great measure, for its success, on how to water properly. Everything is simple after that. Now, the oftener plants want water, the healthier they will be; but to give them water when they do not need it is "awfully" bad practice. The "drainage"—that is to say, the material over the hole at the bottom of the pot—is in order to help carry water rapidly away. It seldom hurts a plant to give it a great deal of water, provided it runs rapidly through the pot, and away through the hole at the bottom. Therefore if you give a plant water in some quantity and it does not run through rapidly, be assured there is something wrong with the drainage. We must always watch very carefully when the plant is dry, before watering it. But the best plan is to turn the pot up-side-down, and knock the edge against a post, letting the ball fall into the left hand, examine the bottom of the ball and take away whatever may obstruct the water's passage, and then return to the same pot. We should like to repeat, so that it may be always present in the mind of the novice in pot culture, that it is almost impossible to give a plant too much water, when the water passes away rapidly through the soil and through the hole in the bottom of the pot. Of course our philosophical readers, who have followed the articles in the GARDENERS' MONTHLY, especially its Natural History Department, know the reason for this; but in this column the idea is to give only practical directions, and to leave reasons alone.

COMMUNICATIONS.

STEAM HEATING A SUCCESS.

BY HARRY CHAAPEL.

In reading the article with the above heading in September issue, by N. B. Stover, I was much surprised at the statement that the cost of heating over 12,000 square feet of glass, a work-shop, and a dwelling house of 13 rooms, the past winter was only $90. Would it not be more to the point, for Mr. Stover to give us the cost of fuel per ton at Youngstown, Ohio?

In contrast to Mr. Stover's statement, I will say, that I have about the same space to heat, *i. e.*, about 12,000 square feet of glass, a packing house 16x40, a dwelling of eight rooms, and my office, using about 6,000 feet of 1¼-inch pipe. I am using the "Exeter" Boiler No. 2, 32 sections, including the "Exeter" manifold valves, automatic dampers, etc. The system of piping seems as near perfect as can be, working nicely at two and three pounds pressure. But we do burn coal, when we want heat, always.

We consider steam a success with us, though we pay $4.50 per gross ton delivered for large broken hard coal, and it has cost us over $400 for coal the winter just past, to heat about the same space, that in Ohio would cost only $90—quite a contrast! I think there is something wrong somewhere.

Williamsport, Pa.

PENTAS CARNEA.

BY CHARLES E. PARNELL.

The flesh colored Pentas, P. carnea, is a very handsome and free flowering stove or warm greenhouse plant, belonging to the Natural Order Cinchonaceæ. It is the only species known, and is a native of the south of Africa, from whence it was introduced in 1842. It is a half shrubby plant of robust symmetrical habit of growth, and can with a little care and attention be so grown as to form an excellent exhibition plant, and it is especially valuable for the length of time in which the flowers are produced. Although it requires a light sunny situation and a winter temperature of from 55° to 60° to enable it to bloom, it will live in a much lower temperature if care be taken as to watering, and young plants struck early in spring, and planted out in a well-enriched deep border, will flower during the entire summer.

The blossoms are produced in corymbose cymes or clusters and stand erect, displaying their lovely soft flesh-colored flowers. When the flowers are at first developed they are very pale, but gradually acquire color by exposure. Like most soft-wooded plants of vigorous growth, the P. carnea requires a generous treatment, and at all times it should be given an abundance of room for its roots. It prefers a compost of two-thirds of well-rotted sods, and one-third well-decomposed stable manure. If large specimens are desired, the plants should be repotted as often as is necessary, until they attain the desired size, when they should be given liquid manure water at least once a week.

Where it can be given a light sunny situation, and a winter temperature of from 55° to 60°, it will be found to be an excellent winter blooming plant for either the greenhouse or window garden. If wanted for this purpose, it is advisable to prepare the plants during the summer, by gradually shifting into larger sized pots, until the plants attain the desired size; by training carefully so as to obtain handsome specimens, and by removing all flower buds the very instant they are noticed, so as to prevent the plants from exhausting themselves by excessive flowering. Ordinary care will be sufficient to keep the plant free from all insect pests, and propagation is easily effected by cuttings of the half-ripened wood, which will root in about ten days; then they should be potted off and encouraged to grow. The plants often flower when quite small, and it does not appear to weaken or injure them in the least.

The generic name is derived from "penti," five, in reference to the number of petals and stamens, Rubiaceous plants usually having but four, and the specific in allusion to the color of the flowers.

Queens, N. Y.

NEW ROSES.

BY EDWIN LONSDALE.

Mr. John N. May, Summit, N. J., is the fortunate possessor of a new rose, which is destined to make its mark—a white one—in the near future in this flower-loving world. This candidate for public favor is a sport from the well-known Catherine Mermet, than which there is no better shaped flower amongst the whole list of roses, and its offspring is like it in every respect, excepting in color, which is pure white.

Strange as it may appear, this rose originated in two different establishments at about the same time; viz., Mr. Taplin's, Maywood, N. J., and Mr. De Forrest's, Summit, in the same State. Mr. May wisely secured all the plants from both the proprietors of the places where it, or they, originated. It is understood that the stock of both will be kept separate and thoroughly tested, to ascertain if there is any difference between them. Some persons may think that this procedure is not necessary; but when we consider that Mabel Morrison, Merveille de Lyon and White Baroness all originated as sports from Baroness Rothschild, and as it will not involve much trouble to keep them separate, even if they should eventually prove to be identical, it will be infinitely more satisfactory to know that there is no essential variation between them. It has not yet been decided when this rare novelty will be distributed.

Mr. C. F. Evans has secured two more of Mr. Henry Bennett's celebrated roses, one of which is pure white, a Hybrid Tea in character. It is the result of a cross between Mabel Morrison and Devoniensis. The other is a Hybrid Perpetual—Mrs. John Laing—a beautiful shade of pink in color. It has been very highly spoken of in the London horticultural journals. It was exhibited at most of the prominent rose shows during the past season, and came off with flying colors every time.

Chestnut Hill (Wyndmoor), Phila.

DENDROBIUM DEARII.

BY EDWARD NORMAN.

I would like to say a few words in praise of Dendrobium Dearii, which I think ought to be in every collection of Orchids; for with about half a dozen plants you can always have some of those frosted white blooms to look at. With us they do not seem to have any special blooming season, but keep on pushing up spike after spike, either from the old or young growth. Of course, it is not such a fine flower as D. eburneum giganteum, which is now in bloom here; but where Eburneum lasts one month, Dearii will keep in bloom three. We had two spikes opened May 20th, and now as fresh as can be. We have a good spike just now open with eighteen flowers on it, which is about the best we have ever had. They are grown in the Cattleya house. I think that is the best house to grow them in, for they are pushing up some fine growths which promise to be as good as those made in their native woods.

The plant that has the eighteen blooms was imported only this spring.

Lee, Mass.

EDITORIAL NOTES.

THE SEA ONION.—This is the common name of a singular plant often found in old greenhouses and windows, and which the hardest treatment will not kill. The bulb is of a greenish tint, above ground, and shines like glass. The flowers are in a long greenish white spike, and peculiar for the long bracts under each family. It belongs to the "Star of Bethlehem" family, and is known botanically as Ornithogalum longebracteatum, or long-bracted, from the peculiarity above noted.

THE PALM HOUSE AT GLASNEVIN, NEAR DUBLIN.—M. Joly, in the proceedings of the Central Horticultural Society of France, gives an interesting account, with illustrations, of a recent visit to this grand horticultural structure. It is 73 feet high, sufficient to grow to perfection most of the Palms under cultivation, and is 110 feet long by 90 feet wide. It was built by Boyd & Co., of Glasgow in Scotland, famous in connection with the building of gigantic hot-houses. It cost

$22,500, and was commenced in March, and completed in September of the same year—1884.

Amaryllis.

SEEDLING FERNS.—Many of the most useful decorative ferns, such as the Adiantums or Maidenhair section, and the equally useful Pteris serrulata and others, produce seed or spores freely, and only need a suitable seed-bed to give a continuous supply of healthy young seedling plants; but I find that amateurs' glasshouses are, in many cases, kept far too dry for such moisture-loving plants as ferns to exist in during the tender seedling state, when a very short period of actual drought suffices to cause them to perish. One of the best ways to insure a good supply of seedling ferns I have yet found is to put a layer of broken bricks, clinkers, and other rough porous material under the plant stages, and work some very fine soil amongst it; and, if this is kept constantly moist by syringing, the fertile spores will settle on it and vegetate in great quantities, and may be potted up as required, or used for cutting from, some of the strong growing ferns, such as Pteris tremula, being especially useful for cutting.—*Gardening Illustrated.*

SCRAPS AND QUERIES.

IMPROVED AMARYLLISES (see cut).—So much has recently been noted by correspondents of our magazine in regard to the beauty of the Amaryllis, and the ease with which they were grown, that we give on opposite page an illustration of one, that the reader may behold with his own eyes how lovely they are. This was taken from a sketch made of one growing in the celebrated Amaryllis house of Messrs. Veitch, of Chelsea, near London.

LOSS BY GAS.—Charles Morat, a florist at Louisville, Kentucky, has had all his stock of greenhouse plants destroyed by leakage from the city gas pipes. There is no excuse for leaky pipes, and a city that permits such severe losses should be made to settle for damages, just as much as when a horse gets killed by a bad road.

BLACK APHIS.—"J. B.," Allegheny, Pa., writes: "I mail specimens of insects which have caused much trouble and considerable loss. I have used tobacco in powder and as a fumigant; also used whale oil soap, insect powder, carbolic acid solution, but found none effective. Smilax has been only crop injured. Was annoyed in same way last season. Can you suggest a remedy?"

[This appears to be only the large black Aphis, so troublesome to the Chrysanthemum grower especially. As it is one of the suctorial tribe, the usual beetle poisons are useless, but it ought to succumb to frequent fumigating with tobacco smoke.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Among the numerous varieties of new fruits continually coming into market, it must puzzle the novice which to select. The raiser of novelties—as in the case of a grape introducer—whose card is before us, tells us that he had his new "seedling" alongside of the Concord, Salem, Hartford, and a dozen others, which all rotted and blighted, and "fizzled out" generally, while his glorious "Pride of Grapedom proved all that could be desirable in a first-class grape." We have a friend who is fond of growing numerous grapes. He has thirty kinds in full bearing and more coming on. His opinion is that: "So far as doing well is concerned, I do not find that one does much better than another, except perhaps the Delaware and the Catawba. These do not always ripen very well. That is to say, some green or immature fruit will always be found among the mature ones. They all do well. My plan is to plant in dry ground; that is, ground in which the water will surely run away rapidly. I like hard, solid ground. By digging about the vines some roots get cut, and these get fungus and molds on the bruised parts, and this communicates to the whole mass. And deleterious insects get into soft ground much easier than when the ground is solid and firm. I keep weeds and grass from getting much headway by piling coal ashes under the plants, and I give the vines as much rich food as I can spare. They do not care how much you give them. This is all my secret." This is the experience of a successful amateur. He does not grow for market, but for pleasure. To some extent such a mode of culture could not be applied on a large scale. But it goes to show that when "every kind rots," and so forth, it is to the cultivator and the cultivation, and not the variety, that we may often place the blame.

There is, however, always pleasure in watching the progress of some new variety, and in testing the improvements supposed to be made; and while relying mainly on well-known and well-tested varieties for one's main crop, a judicious experimenting with new kinds will be found to be a source of great pleasure.

In looking at what is now considered as sound practice, and back on the advice we used to give when such advice was heresy, we often congratulate ourselves on the success of our teachings; though few seem to remember to whom they are indebted for what has been taught. Take, for instance, the shading of fruit in order to get them to perfection. When the GARDENERS' MONTHLY was first issued, the general belief was that it required "sun and air" to ripen fruits well, and the books teemed with directions to pull off leaves, thin out branches, and tie up shoots, and expose the fruit if we would have the best success. We showed that the initial stages of maturity was a vital, and not a purely chemical process; and that this was better secured by shade than by exposure. It was not good doctrine then, but now the general practice with those who want to get the very best bunches of grapes is to put paper bags on them; and some say that even tomatoes are far superior when treated in this way. But it is necessary that leaves should have the full light, though the fruit may not; and a few good, large healthy leaves are preferable to a good number of small ones. By far too many branches are left on most trees. When the tree is in leaf, the one branch smothers out the other, and, remembering what we have already said about the value of healthy leaves, few leaves arrive at that perfection necessary to perfect the best fruit. Therefore. prune out enough of the weaker ones to give the rest every chance to develop their leaves to the fullest extent. Also prune so as to assist the plant to a conical form, as this enables the light to act better on all parts of the tree leaves. If trees have been neglected, in pruning now severely to get them to this shape, the result will be to make them throw out shoots still more vigorously from near the parts cut away. When these shoots appear in spring, pull them out while young with the finger and thumb. The current of sap will then flow strongly into the shoots left, and the ratio of growth will, in the end, be nearly equal through all the branches. The flow of sap through a tree is nearly like that of water through an uneven country. A very little obstruction will turn the course; but that, once started, soon becomes as great a stream in the new as in the old channel.

Apple trees have a habit, when old, of pushing out sappy shoots along the main branches. These should be cut away, in addition to a similar thinning, as recommended for the pear.

Dwarf apples and dwarf pears should be examined now to see what the borer is doing for them. This is the time when they do the most destruction, as they are boring down into the stems for winter protection. A cut with a jack-knife up and down the stems, so as to avoid girdling as much as possible, is the most certain destruction. Then, if in spring, before the parent insects begin to work, oiled paper, or rather tarred paper, be put about the stem near the ground they can be kept out. It is strange that with so little time as borer hunting takes, so many thousand trees should be allowed to die from their attacks every year.

Above all, for both apple and pear orchards, we bespeak a liberal dressing—a top dressing of something or another. If no manure is to be had, even common road sand will be found to have a beneficial influence.

Poverty of the surface soil is oftener a cause of fruit failure than "grass" "change of climate," or many imaginable ills, brought up from some ghostly cavern of thought, to cover up the poverty of pocket or of industrial inclinations.

Strawberries are much better when protected through the winter, no matter how "hardy" they may be. Very coarse, strawy manure is the best material, which can be raked off in early spring. A few inches is sufficient, just enough to keep the sun off when frozen, which all our readers know, by this time, is the chief cause of loss by frost.

COMMUNICATIONS.

A TALK ABOUT MUSHROOMS.

BY PROF. J. T. ROTHROCK.

The third lecture of the autumn series Dr. Rothrock delivered in Horticultural Hall, Fairmount Park, recently. It was by special request that the subject, Mushrooms and Toadstools, was taken up.

The lecturer said he had: "Nothing to add to what the daily papers had recently published. The *Ledger* especially had given much exact and valuable matter concerning this group of plants. He hoped simply by calling attention to some illustrations, to give a few more people a more clear notion as to the appearances of some very good and some very bad plants among these fungi. It was exactly a case of 'line upon line' on a most important subject.

"Some men could eat no species of fungus without sickness, but as there is hardly any one article of food which suited all people equally well, this fact should not lead to mushrooms,—which most persons can eat,—being denounced. On the other hand, by proper preparation many fungi which are usually poisonous can be made edible. Men generally regard toadstools as simply poisonous mushrooms. The above facts, however, show that as one man's food may be another's poison, such a distinction between mushrooms and toadstools cannot stand. It were well if it could be dropped entirely.

"People imagine that as there is no sign by which we may always recognize a poisonous fungus, they are, therefore, more difficult to detect than poisonous flowering plants. The fact is, that in each case there are certain distinguishing marks belonging to each species, and knowing these, one may readily determine whether or not the plant is poisonous. You must learn to recognize some edible fungi as certainly as you recognize apples or peaches, and you can do it just as easily.

"Two mushrooms with gills were then drawn on the board. One was the Agaricus campestris (the common edible mushroom); and the other was the Agaricus (or Amanita) vernus, which has a recent sad interest in connection with the poisoning of a family at Shenandoah, in this State.

"The first, Agaricus campestris, grows in pastures, lawns, lanes, but not in the woods. In its best (and safe condition) its expanded cap is white, and a little downy above, and the gills beneath are pink or purple, but not white. The stem is nearly solid; does not rise out of a cup (volva) at the base, and has a ring about it in the upper half. These characters will not lead one into danger.

"The poison, Amanita (Agaricus vernus), has white gills, is white, yellow, bright or pale red above, and at first has a conspicuously marked ring around the stem; and the stem rises out of a cup (volva) at its base. Keep clear of all such fungi, whether poisonous or not. Unless they are certainly known to you, let them alone. That is safe advice to act upon.

"Puffballs were next alluded to. These are usually white, roundish or oblong, and vary in size from an inch in diameter to over a foot, or, in extreme instances, to a yard in diameter. At first they are, inside, solid, white and edible; then yellowish, spongy and suspicious; lastly, black, powdery, and unfit to eat. There are many different kinds with us, but before they turn yellow all are safe as food. They may grow on stumps, on sandy soils or on grassy banks, especially after a drenching rain in the latter part of summer. Cook them as you would an egg-plant.

"The next group spoken of was that known as Boletus. Its characteristic is the pores on the under side of the cap. Split this cap and the pores are seen to be the entrances of a mass of closely compacted tubes, which lie straight and parallel, and are open below. There are a number of species of Boletus. All are said to be edible. It may be so; but the lecturer only advised general use of one—Boletus edulis—because, first, it was known to be safe; because, secondly, it was not rare; and lastly, because it was easily recognized. Picture to yourself a fungus from three to six inches high, with a stout stem, which is somewhat swollen below, the cap thick, chestnut-colored above, and mouths of the tubes below yellow or yellowish green. Whatever others may say, unless you are sure of the species, eat no Boletus with red or reddish tubes.

"The lecturer gave, he said, but a few out of the many which he might have named. What advice he gave, however, was safe.

"There was a point he insisted upon—that, as fungi, which were edible and delicious and nutritious, were probably more abundant here than in Europe, where they were an important article of food, it was in the interest of the community that every one should know them. Every public school in this State should have, where every child could see them, plaster models, life size and color, of the edible and the poisonous species. This idea could easily be realized and would involve almost no expense, whilst its practical benefits would be larger than we can at present conceive of. Even the Chinese government prints and distributes broadcast over the land what is known as the Anti-Famine Herbal, a book describing nearly 500 species of plants, which, in times of scarcity, may be utilized as food. Are we still to remain in this respect below these, whom we consider barbarians?"

[The above excellent synopsis of one of the Michaux Lectures in Fairmount Park was made for the *Public Ledger* of Philadelphia.

We may add that to those who desire further knowledge, the colored plates of Edible and Poisonous Mushrooms recently issued by Messrs. Prang & Co., will be very seasonable.—Ed. G. M.]

EDITORIAL NOTES.

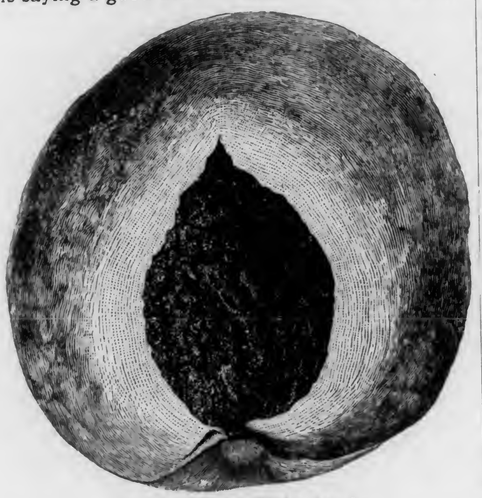
RIDICULOUS NAMES FOR FRUITS.—Col. Wilder's efforts to reform the names of fruits—and of course flowers—are meeting with singular success. We cannot wholly control by rules an introducer's right to give a name to his fruit; but we can so control public opinion that the mere fact that a silly name has been given to a fruit will operate against its popularity. It will at once be evident that the fruit has been introduced by an ignoramus who does not know whether his production is of any value or not. No intelligent pomologist will deal in such trashy names.

IDENTICAL FRUITS.—It would be next to impossible if among the thousands of seedling plants that annually appear, some one or another did not appear like unto some former one. Many of

us older fellows cannot see a particle of difference between some of the new Raspberry, Strawberry, and other fruits of the day, and those of a half century back, which were born and have died long ago. Mr. Hovey is quite fruitful in these recollections. He has shown how great is the resemblance of the Manchester Strawberry to the old Hovey; the Keiffer Pear to the Shah-Lea, and he now points to the resemblance of the Lawson or Comet Pear to the French Bellissima d'Ete.

THE GLOBE PEACH.—Mr. Shearer, of Tuckerton, Pa., sends us a box of peaches which he has raised and named the "Globe." It is a very pretty peach ripening with and somewhat of the style of Crawford's Late. It is about the size, but rather longer in outline, and with firmer flesh; the color of the skin, light yellow with dark red next the sun, is about the same as in that well-known and popular variety.

The flavor is quite equal to Crawford's Late, which is saying a good deal in favor of the new variety.



Section of the Globe Peach.

The exact merit of a peach cannot be stated on the fruit alone. The exact time of ripening, in competition with other well-known kinds, is of great moment; a few days before or after giving value, where simultaneity would give none—then its comparative productiveness and regularity is a great item, as is also its adaptation to certain soils.

As this is considerably far north to raise a peach of this fine size and good flavor, we are inclined to think highly of it, and give the enclosed outline, as some guide to its appearance. The fruit measured 8¼ inches in circumference and weighed 6½ oz. We suppose it may be much later than Crawford.

ROOT FUNGUS AND YELLOWS.—The *Farm and Garden* says: "We would ask the GARDENERS' MONTHLY, if its root-fungus theory be true, how it is, that if the tops of so many peach trees that have the yellows, are cut away two feet or so from the trunk, that a new and healthy top will form? We would also ask why, in the case of the yellows, a healthy shoot will grow from the body of the tree if the roots are diseased. The fact is well known, that if the roots of a tree are diseased, the entire tree suffers at once, and its vitality is destroyed, and pruning hastens the decay."

We never knew of a case of genuine yellows in which the whole tree was not more or less affected.

PLUM CULTURE.—How strikingly the modern triumph over the one time irresistible curculio is illustrated, anyone can see by the fruit stands and fruit stores which exhibit plums in profusion everywhere. Scarcely ten years ago hundreds of people could not tell a plum from a meteorite. Ellwanger & Barry were about the only ones who kept people in mind that there was such a fruit, by exhibiting a few at horticultural shows. A pleasant reminder of how popular a fruit it has become, is now before us in the shape of a basket of Reine Claudes from Mr. Willard, of Geneva, N. Y. Only think of a half bushel of plums!

SPECIMENS OF FRUITS AND PLANTS.—These often reach us without any indications as to where they came from. And as there may be many scores of letters, it is not always possible to tell to what package the letters refer. There is no law against writing the name of the sender on the package.

ROESCH'S VINEYARDS.—The Fredonia *Censor* says that that this grape-vine nursery has increased from a small business in 1875 to 13 acres of young plants last spring; a large number of varieties are under propagation, and great precautions taken to keep each variety true to name.

THE JERUSALEM ARTICHOKE.—It is found that the roots of Jerusalem artichoke yield 8 per cent. of alcohol, and, as it does well in comparatively poor soil, it is extensively grown for this purpose. Around Antwerp no less than 3500 acres are under this plant this season.

THE PEA BEETLE IN THE LAST CENTURY.—By a note in the Proceedings of the American Philosophical Society of March 3, 1769, we find that the pea weevil was as great a pest at that time as it is to-day.

SCRAPS AND QUERIES.

NEWTOWN PIPPIN APPLE.—A Rochester correspondent says: "L. T. Sanders, Collinsburg, Louisiana, requested me to mail you an apple, which I have done to-day; no doubt he has written you about it."

[We have not heard from the party referred to. We see no difference between it and the green Newtown Pippin as grown North, except that it was earlier. It was in excellent eating condition October 1st. Supposing it to have been grown in Louisiana, we should call it an excellent specimen, though the little fungus that gives it the black dotted appearance, indicates that here, as elsewhere, the tree is not thoroughly healthy. Only for this disposition to unhealthiness the Newtown Pippin would be king of apples.—Ed. G. M.]

Since the above was written a letter from Mr. L. T. Sanders, Collinsburg, Louisiana, who calls it the "Yellow Forest apple," and says it was found growing in the woods by Captain Winston, and by him transplanted to his orchard, and is now about fifteen years old. It is possible there may be some difference from the Newtown Pippin that we do not recognize in the single specimen before us.

EATON GRAPE.—A new grape by the Moores generally means a good improvement, and this is no exception. The bunch weighed 14½ oz., and the black berries are large. It has a rather tart flavor which is more acceptable to some palates when properly developed than the honeyed flavor of the other class. This property varies with location, generally improving on a Southward march. The leaf is very large also, the blade being 12x9 inches. It is said to be a trifle earlier than Concord. It was raised by Calvin Eaton, of Concord, N. H.

FIRE BLIGHT IN THE PEAR.—A Rahway, New Jersey, correspondent says: "Pear blight is fearful this summer—Bartlett, Seckel, D'Anjou, heretofore free, are now suffering."

[This is particularly interesting as the Seckel is usually found less susceptible to the fungus influence than others.—Ed. G. M.]

ULSTER PROLIFIC GRAPE—Messrs. A. J. Caywood & Son send us bunches of this. It is a red grape, berries about the size of the old Catawba, but the bunches are small, taking eight to weigh one pound. The skin is rather thick, but the flavor delicious. In this last respect we hardly know how any thing can excel it. The double name is a misfortune, as we suppose Ulster is all it will get from the people.

HAUTBOIS STRAWBERRY—Mr. Geo. W. Dobbin, St. Denis P. O., Balt. co., Md., cannot find this old fruit in any catalogue. If any one has them for sale he can communicate with the gentleman.

GRAPES FROM GREEN WOOD CUTTINGS.—A Canadian correspondent says: "Being interested in grape growing the question has come up, are vines grown from green wood cuttings in all respects as good as when grown from ripened wood?"

[Years ago when the public first became aware of the great march taken in the progress of improvement in grapes, the demand was enormous, and propagating from green wood resorted to in order to meet the great demand. In a few years disease and disaster followed, and it became clear that the vital power of vines so raised was not equal to that raised from matured wood. The practice was abandoned, and since then but very little difference has been found in the supposed hardiness of one kind more than another. Florists are now learning the same lesson over again in the case of the verbena and carnation. They are coming to the conclusion that the susceptibility of these plants in modern times, to various diseases they were exempt from years ago, comes from weakened vital power through continuous propagation from immature or green wood. All the facts tend to confirm this view, and though we do not suppose there would be any great injury result from one generation of grape propagation from green wood, it is dangerous to follow it through several.—Ed. G. M.]

DOTTED AND RUSSETTED APPLES.—"M. R.," Honesdale, Pa.: "To what extent are the small black dots and occasional russet characteristic of any one variety of apple?"

[If we understand correctly what our correspondent means by small black dots, these have no necessary connection with the fruit. They are fungus parasites, though, as in the case of the cracks in the white Doyenne or Butter pear, they seem to have an affection for some varieties more than others. The nature of russet is not clearly understood. It is immediately caused by the rupture and destruction of the external cuticle, and may be produced artificially. But what causes this destruction in a general way, especially so as to give a character to a variety, is not known. Its true nature will probably be ascertained when some one makes the production of cork a study. This comes from the develop-

ment of what are known to botanists as suber or cork cells. It is this development which destroys the bark of trees, and causes what we know as "rough bark." It is not the mere cracking by growth, as the development of these cork cells which gives the rifts to trees. Something of this growth we believe to be connected with the production of russet in fruits, but some one should take in hand the demonstration of the fact before this belief is accepted as pure horticultural gospel. —Ed. G. M.]

KALAMAZOO CELERY. — We are indebted to Messrs. Van Hampton & Co. for several stalks of Kalamazoo celery. It was received on the 25th of September, so we suppose has not yet finished its growth. It was trimmed in marketable condition, and weighed 1 lb. 8 oz. The eatable length was about 20 inches. We suppose this is farm, or as we should say, market garden produce, and for that is very superior. It is of course not equal to the produce from a first-class amateur's garden. The stalks are few, but solid and crisp. Later in the season it will probably part with its slightly bitter taste.

FRUIT OF THE JAPAN CHESTNUT.—T. Brothers, Orleans, France, write: "Please say through the GARDENERS' MONTHLY whether the statement in an American catalogue that the Japan chestnut will produce seven nuts in one burr is correct?"

[The Editor has but one tree of bearing age. The fruit does not perfect on this, probably through some deficiency in pollenization. The largest specimen under cultivation that we have any knowledge of is on the grounds of Messrs. Parsons & Co. This is 18 feet. In this case the burrs have not been found to yield any more than the common chestnut, that is, three, but sometimes only two or one.—Ed. G. M.]

FORESTRY.

COMMUNICATIONS.

THE CORSICAN PINE FOR TIMBER.

BY ROBERT DOUGLAS.

We have had many inquiries lately for Corsican pine trees, and one of our patrons has taken us rather severely to task for not keeping up with the times, and growing so few kinds. Our experience with this tree, if published in the MONTHLY, may prevent parties from importing the seedlings, as threatened by the party referred to above. Our experience is as follows. Between twenty-five and thirty years ago, the Corsican pine was lauded very highly in Europe, as growing more rapidly than the larch, etc. I imported the seeds in large quantity, and at a large price. It germinated readily, and grew very rapidly, but the first year after being exposed to the weather, the foliage browned early in winter, proving that it was not suitable for this climate. Hoping that the tree might stand the climate further south, I offered them to parties in the southern trade. We sent a large quantity to a large nursery firm in St. Louis, selling them at the price of Scotch pine. They browned there nearly as badly as with us, so we destroyed our whole stock of them. Again, about seven or eight years ago, Mr. Jos. S. Fay, owner of the large plantation on Cape Cod, wrote me that he had planted the Corsican pine, and it grew more rapidly than other pines. As we furnish more pine trees for forest planting in New England than in the West, we again imported Corsican pine seeds for that market. While these seedlings were making their first year's growth, I was down on Cape Cod, examining Pitch pine plantations of twenty to thirty years growth, and went to Mr. Fay's to examine the Corsican pines. He told me that he had been sadly disappointed in them. We went and examined them, and they were as complete a failure as in Northern Illinois and St. Louis. And it was a surprise to me to learn from your August number, that the foliage would stand at Philadelphia, but many trees stand at Philadelphia that fail 3° further south, when away from the seashore.

I am even more surprised reading in the MONTHLY the dimensions of this tree at thirty-six years of age, where it has had room to develop in rich garden ground, and where the climate must be adapted to its growth, or it could not have preserved its lower limbs till thirty-six years old.

Now after all the boasting in Europe about the rapid growth of this tree, it cannot compare with our own White pine. True, it will grow faster the first few years, just as all our native scrub pines—so-called—will grow faster than the White; but at thirty-five years, or in one-third of that time, the White pine will outstrip any European pine I have ever had any experience with, and any American, unless it be P. resinosa, which will hold its growth with the White pine for nearly or quite twenty years. And yet we never see the White pine brought to the front as a rapid growing tree.

I have White pines planted on the banks of my ravine, poor gravelly soil. The trees were dug out of the sand dunes on the Lake shore, little miserable scrubs, about a foot high. They have been planted thirty-one years, and I can show a larger girth and greater height than Mr. Buist's thirty-five-year-old tree; but this is not a fair test. Mr. A. R. Whitney, of Franklin Grove, Lee Co., Illinois, eighty-five miles west of Chicago, dug some White pine trees out of a sandy barren in the neighborhood in 1859, that were about a foot in height. He planted them in the sod where they have not since been cultivated. I have seen these trees nearly every year since they were planted, but never noticed that they were doing any better than other White pines.

Last winter Mr. Whitney was taken sick. I went out in January to see him. The snow was over two feet deep under these trees. I girthed them at what I supposed to be three feet above ground. These trees had then made twenty-six years growth since planted, hence were nine years younger than Mr. Buist's Corsican pine. One girthed 5 feet 5 inches, one 5 feet 11 inches, and one 4 feet 11 inches. And yet we never hear a word about the rapid growth of the White pine, while we know that if any such showing could be made for a foreign tree, adapted to nearly all kinds of soil, so free from disease, and the lumber of such value when grown, our eyes would be blurred reading its praises in every horticultural paper, and our ears would be dinned listening to essays and harangues in every forestry convention in the country.

I would have measured another group of White pines, planted by Mr. Whitney's father in 1851, but the snow was so deep, and the thermometer 26° below zero, my fingers declined to serve.

Waukegan, Ill.

[In conversation recently with a highly intelligent European forester the subject of the Corsican pine was introduced. His views were just about the same as Mr. Douglas'. "Rapid growing enough when young, but does not make timber of any size, and is not what we want."—Ed. G. M.]

A FINE SPECIMEN OF AMELANCHIER CANADENSIS.

BY DR. GORDON W. RUSSELL.

Emerson says, "There are two remarkable varieties of this species found in Massachusetts. Both are called Shad-bush, from flowering when the shad begin to ascend the streams." One of these, A. ovalis, is usually found in low and marshy grounds, and usually rises from four to ten feet in height. The other, A. botryapium, or June Berry, usually grows in upland woods; "is a small, graceful tree, from fifteen to twenty-five, sometimes thirty, and even forty feet high;" and the above authority states that "a tree of this species standing near the comb factory in Chester (Mass.), measured five feet seven inches in circumference, at five feet from the ground."

A still more remarkable specimen, which was brought to my attention by Dr. Davis, of this city, has been found in Glastonbury. It is in an open field on the road to Buckingham, about forty rods east of the main street, on the land of Isaac House. It is composed of two trunks, hardly united, I think, but growing closely together for the height of six feet from the ground. These may spring from two separate and distinct sets of roots, but probably from one. On the south side, the seam, or line of division, would plainly indicate that there are two trees; on the northeast side the line is equally plain nearly to the ground, where the separation is ill-defined and not clearly to be traced; it is especially plain and well marked on the southwest side, though not as distinct as on the opposite side.

At three feet from the ground it is eight feet eight inches in circumference, the line being pressed into the depression, and this in the waist, or narrowest part of the trunk, or trunks. The long diameter is three feet seven inches. At the point of separation, five feet from the ground, each trunk, or branch, is five feet nine inches is circumference, with a diameter of twenty-one inches. It has a spread of branches of forty-nine feet each way. It has a well-rounded head, and is generally healthy, though there are a few dead limbs in its upper part. When these measurements were made, May 21, 1883, there were still a few blossoms remaining in their last stage. I should judge it to be from forty to fifty feet in height.

I visited it again on May 15th of this year; it was then in full bloom, and was a noble sight; any one passing it on the road would be struck with the mass of greenish white flowers with which it was covered. I could learn but little about it

in the neighborhood; though it was considered as a rare tree, and that it was time to plant corn when the blossoms appeared.

I have had no opportunity to examine the leaves or fruit, both of which are desirable.

Other popular names are June Berry, Wild Pear tree and Shad-flower.

Michaux says that "in the western country it is found in the midst of the forest among the oaks, the walnuts, the maples, etc. Here, also, it reaches its greatest height, which does not exceed thirty-five or forty feet, with a diameter of ten or twelve inches." The fruit is small, roundish, or pear-shaped, and is said by Torrey to be of "the size of a large whortleberry, red until fully ripe, when it becomes rather dark purple, sweet and palatable." It is much sought after by birds, and though Michaux found it in the markets at Pittsburg, and Dr. Darlington thought it might be much improved by cultivation, yet it remains "good fruit for birds," and doubtless that is all.

I am indebted to Dr. G. P. Davis for a fine photograph of this magnificent tree.

Hartford, Conn.

[The above was originally contributed to a Hartford paper, but has been sent to us by the author. We are sure it will be acceptable to the many lovers of fine trees among our readers. We believe a portion of a trunk very nearly as large as this was brought to the attention of the writer by Dr. Brewer at the American Centennial, which was also obtained from some place in the East.

In this part of the world the popular name in most common use is "Indian cherry." In English gardens it goes as the "Snowy Mespilus." A dwarf form in the West bears very superior fruit, well worthy of cultivation, and in Oregon is a marked variety or closely allied species that the writer in his "tramps" used to gather and eat by the handful, under the impression that it was the best of the wild fruits of that region.—Ed. G. M.]

SCRAPS AND QUERIES.

SALIX FRAGILIS FOR TANNING.—A subscriber at Lewistown desires to know how he may get from Russia a stock of this willow which he has read of in the Western papers, as being introduced into that section from Russia for tanning purposes.

We have seen no accounts of any such introduction in the West, nor would there be any occasion for such a direct introduction, for it has been introduced a hundred years ago, and is in abundance everywhere. It is the leading willow in the East grown for basket making, and our correspondent could no doubt find lots of it along the Juniata River, near his own home. It ought to be also very common in the West, for a few years ago when the willow fence craze went like a prairie fire over the West, despite the caution of this magazine, tons of cuttings—carloads on carloads—of this and its neighbor, the White willow, were sent to that region; and there ought to be enough plants left lingering to furnish cheap cuttings, without investing a small fortune in sending to Russia for them.

Perhaps there may be such a craze for the Red willow as our correspondent unknown to us, for, judging by Russian Mulberry, and Russian other things which have had a run at high figures in the West, there is room for little speculations of this sort.

GROWTH OF TREES AT RAHWAY, N. J.—Facts concerning the growth of trees in America are much needed for intelligent guidance in our forestry operations. The following figures are made by Mr. W. E. Clark, civil engineer, from trees growing on Mr. Jacob R. Shotwell's property at Rahway, New Jersey, planted in 1857:

"Norway Spruce, 47 feet high, 2.2 feet diameter, 38 feet spread of limbs. Silver Maple, 69 feet high, 2.45 feet diameter, 49 feet and 43 feet spread of limbs. Sugar Maple, 61 feet high, 2.2 feet diameter, 60 feet spread of limbs. Horse Chestnut, 40.3 feet high, 1.3 feet diameter, 24 feet spread of limbs."

CHANGE OF CLIMATE.—"M. R.," Honesdale, Pa.: "In your last you say, 'Now climates must of necessity change.' Why 'of necessity?' I find no statement in treatises on the physical relations of the earth. I am interested very much in this matter, as I suppose you refer to the destruction of our forests."

[Forests were not in the Editorial mind. It is too wide a topic to enter on here; we had no thought the statement would be disputed. If, however, our correspondent will remember that water runs down hill, and that sand, stones, and earth go down with it, he may understand that it is only a question of time when an "everlasting" hill shall be on a level with the ocean. The delta at the mouth of the Mississippi, is indeed but earth much of which no doubt once formed the highest peaks of the Rocky Mountains. Then he will have to remember that winds, currents, snows, and other local phenomena in meteorology, depend on the heights of mountains, and, just as they lower, the conditions change. A tall mountain may be snow-capped all summer; when it gets lower it will have no summer snow, and no summer streams. Local climate must change in consequence. Even the deposits of earth at the mouth of the Mississippi will change the direction of the warm current, and this will modify the climate of the countries the warm water flows against. A volcanic upheaval in the Atlantic Ocean would change the Gulf Stream, and in the short space of a few months, England and its bright flowers and green lawns might become another Iceland. As long as the laws we have briefly alluded to continue in operation, one is justified in the statement that climates must "of necessity" change.—Ed. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

EXTRACTS FROM A BOTANIST'S JOURNAL.

BY M. D.

A picture of a ditch and its surroundings. Which ditch is close, and parallel with, a bank of the Erie Canal, in the outskirts of Rochester. Picture taken on the spot:

From one side to the other of it the Sagittaria grows, S. variabilis, the upper points of its arrow-shaped leaves touching an unseen plane as much eight or ten inches above the water's surface. The vertical stem, or scape, and straight divergent branches, tipped with white flowers, of the water plantain (Alisma Plantago), right before me, are eye-catching. This is a flower panicle, and must rise thirty inches above the water, surpassing the leaves by nearly twenty. Its roots are with those of the arrow-head in the mud below. Around and amongst these two, like mere lines of greenness, surmounted with an oblong brown head somewhat broader than themselves, I notice the culms of Eleocharis palustris; and beyond, still in the water, bunches of the soft rush, Juncus effusus, reach a height of two feet above their fellows. Two species of duck's-meat float on the water, the many-rooted Lemna polyrhiza, and the slightly smaller L. perpusilla.

Sagittaria heterophylla may be here. I do not see it, but I know it is not far away. Much above all the preceding, even the Alisma, shoots Typha latifolia, the species of cat-tail that has the fertile and infertile parts of its spike closely joined.

A grass, Leersia oryzoides, with leaves and sheaths excessively harsh, and not yet in flower, gives a pale green edge to the ditch; whilst crowding upon it we see Agrostis alba perhaps, and higher, the dark bluish-green Poa pratensis, or Kentucky blue-grass. Here and there, growing in the ditch's muddy edge, we observe the bugle-weed—the European species with sharp angled stems and deeply sinuate leaves. Over the bugle-weed, and forming a border to the whole, rises Solidago Canadensis, a great array of it, suggesting indeed as many human onlookers.

Amongst the golden-rod, and extending still further back, the wild teasel, Dipsacus sylvestris, mingles with the rapidly-fading Canada thistle, C. arvense, the latter's woolly seeds at top, now offering themselves to every passing breeze.

The dry and yellow stems, and closely-appressed spikes of Festuca elatior, are conspicuous beyond, with Maruta cotula in flower; brown dark-and-dead-panicled Rumex crispus, Aster patens, and the young basket willow, with its upright branches and gray-green leaves. Sweet scabious, or Erigeron annum, and mayhap E. strigosum, still flower there, but in faded dress; also flat-umbelled Daucus Carota, tall E. Canadense, not quite in bloom, with the yellow-racemed Melilotus officinalis, the brighter and biennial evening primrose, and a group of Canada thistles that are late in showing their handsome purple flower heads.

There I see a Solidago, apparently right in the ditch, and as it is in flower should be S. arguta or S. gigantea. But not to be forgotten, Asclepias Cornuti, now in fruit, stands before me. If a flower umbel surmounts its stem, it has lost color and is limp, for its blooming day is past. Not in sight, but certainly in the glen yonder, the handsome umbelled A. incarnata has taken its place. Daisy fleabane, previously mentioned as sweet scabious, is here in force to my right, but its stems look yellow and its flowers are not as bright as they have been. At my feet I have red clover, young stools of the wild teasel, bright looking leaf rosettes of the dandelion, black medick showing its yellow flowers and ripened fruit at once, flowering ox-eye

daisies, and fresher looking and lower plants of the same, which will be the flower bearers of the season to come. Here too is a pretty group of wild carrot, and leaning over it, the long arms of the white melilot.

Many-branched Equisetum arvense humbly shows itself where a little of the less fertile undersoil has been turned up, and near by Ambrosia artemisiafolia is still flowerless, as is also the obliquely-bending Aster Miser by its side. Big-leaved burdock, broad-leaved plantain, ripe spiked Phleum pratense, a young Rubus villosus, self-heal with heads much lengthened and still exhibiting a trio of flowers and twice as many lips, complete the circuit of the green things in and about this still bit of fresh water. *August 7th, 1885.*

Erigeron Pennsylvanicum is the handsomest of the fleabanes. It is not near so common in the vicinity of Rochester—notwithstanding Common happens to be its popular name—as is sweet scabious (E. annuum), but would probably correspond in frequency of appearance with E. strigosum. Its rose-colored rays are beautiful. The rayless-headed horse reed, E. Canadense, is just flowering, and may be seen on streets and roads, in fields and odd corners, everywhere.

As E. Pennsylvanicum is not mentioned by Gray as having noticeable root leaves, but really has them, and as the root leaves of E. bellidifolium are given by Gray with shape et cetera, I was at first, after a hasty analysis, in considerable doubt to which of these species the plant of this vicinity belonged. At this date the case is easily determined, without looking for the basal offsets, as E. bellidifolium is a May-flowering plant. The width of the rays, their number, and their color, ought to be sufficient, in each instance, to identify the species. I would, however, hardly term the flower heads of E. Pennsylvanicum, as we find them here, small, but rather medium sized to large, and the leaves thick rather than thin. The heads of all the plants seen by me, bore rays exceeding those of E. annuum: in fact, were conspicuous for size as well as their rosy tinting. *August 10th, 1885.*

The arbor vitæ overhangs the edge of the rock platform below the lowest Genesee fall where the cliff descends beneath it nearly perpendicularly to the river's edge.

The linden, the ironwood, and a hawthorn are also there, with cow-clipped branches toward the flat. One forgets the trees on catching sight of this venturesome pruning. The particular cow that did this, we know, had no nerves. Perhaps she found better footing than appears to the passer a few feet away, but it seems there as if she might have taken very large risks in stretching her neck to browse over such a yawning abyss. She must love such food.

The arbor vitæ's disposition to overhang streams must be ingrained, for I recollect noticing it along the upper Mississippi years ago, at just such oblique practice. Perhaps the tree may be vain and loves to see itself, reversed, in the liquid mirror below. *August 11th, 1885.*

All bunches of grapes are double bunches. The two parts, forming the double bunch, are very dissimilar in size, but why this dissimilarity I do not know. The tendrils of the grape are forked, and as the bunch of fruit is but a modification of the tendril, the forked habit of the latter is continued in the former, the result being a double panicle of berries. This fact is more clearly illustrated in the tendrils and corresponding fruit panicles of the Virginia creeper, a member of the same order as the grape. *August 11th, 1885.*

How often you are asked why the May-apple was given so unsuitable a name, and at the same time told that it should have ripened its fruit in the merry month instead of keeping it green until August is just ready to leave us, or September has actually appeared.

The large, golden, egg-like or prune-shaped berry of this plant, which reaches maturity beneath two green umbrellas, and perhaps a whole tree of leaves still farther above, is pleasantly acid to the taste. But how happens it that the substantial stem and the dark deeply-lobed leaves will, about the first of this month, hastily fall to the ground, and within a week's time perchance pass from greenness to brownness and decay? Except for the bright fruit this herb, which but a fortnight ago was conspicuous in the woods, would not now be discoverable. Why this sudden vanishing, without frost to cause it? It must be because all the plant's life goes to the perfecting of the seed and its lively flavored and gay colored envelope.

The large, fresh leaves of the Podophyllum are as attractive to me, and doubtless to many others, as any of the flowers, or flowers and leaves combined, of the early spring plants. I remember enjoying them very much as seen growing in your Fairmount Park on a certain grassy, half basin-like descent, amongst lingering brown leaves, and near the edge of a bit of woods into which they probably extended. As to the name of this plant it certainly seems appropriate enough when we remember that it flowers in the last spring month.

Rochester, N. Y., Aug. 12th, 1885.

[It may be a matter of some interest why the Podophyllum got the name of May-apple; the flowering in May could hardly have suggested it. In Virginia the fruit of the Passion flower is also called May-apple, and there is some resemblance in the form and taste of the fruit. Possibly one kind gave the name to the other.

Those, botanically inclined, may find more than this question of name derivation in the May-apple. It is placed in the family of Berberries—Berberidaceæ. A careful examination of the flowers and fruit of the wild ginger, Asarum Canadense, and indeed the creeping roots, the whole habit and character will show morphologically a close relationship; and though Aristolochiaceæ, to which the wild ginger belongs, is necessarily placed far away in the natural arrangements made by the botanists, we shall see how derivation will set at defiance even the best devised system of botanical classification.

This is a point the Editor hoped to work up some day for the edification of systematic botanists; but life is short and duties numerous. It is one of those things younger men may get interested in. —Ed. G. M.]

EDITORIAL NOTES.

Host Plants of the Mistletoe.—That the Mistletoe will be found on a plant abundantly in one period of the world's history, and in the same region centuries later be found chiefly on other plants, is extremely interesting in connection with the supposed change of climate with time. Our note on this topic has attracted some attention, and we should be glad to have further notes on the subject. What is wanted is to know the prevailing host plants from as many localities as possible.

We believe we are not mistaken in our impression, that in the upper waters of many Virginia rivers, for instance the Gauley, Greenbrier, Kanawha, New River, Shenandoah, Rapidan, Roanoke, and others along which the writer has collected plants, the Mistletoe was more frequently associated with the elm than any other tree. The opportunity for collecting in the lower or coast line counties has been more limited.

The Atamasco Lilies.—It is perhaps unfortunate that the language of flowers has not the same meaning to the horticulturist as to the botanist. So far as botany is concerned, the light flowered Atamasco lily—Zephyranthes candida—is the same as Z. atamasco, and is given as a synonym of the latter in modern botanical works. But as horticulturists must keep the bright pink form separate from the whitish one, we have to recognize Zephyranthes candida as especially denoting the latter. We might in common parlance say "White Fairy Lily" when referring to the Z. candida, but as Z. Treatæ is white also that would make confusion still.

Immediate Influence of Pollen on Fruit.—At the meeting of the American Pomological Society Prof. Lazenby said that his experiments with the Crescent strawberry, though showing some immediate influence he thought, were not as satisfactory as those of the previous year.

Mr. Fuller took a more advanced view than any yet recorded; the pollen had not only an immediate influence on the fruit, but also on the whole plant. A detail of the facts on which Mr. Fuller bases this conclusion will be looked for with much interest.

SCRAPS AND QUERIES.

The Mistletoe in Virginia.—"Mrs. M. H. G." writes: "In your issue of the Gardeners' Monthly and Horticulturist, date October 1st, 1885, I notice an article on the mistletoe, in reply to an inquirer signing himself 'Student.' In this you tell him that the State of Virginia produces the mistletoe on the elm.

"I am a Virginian by birth, and resided in that State up to the time of my marriage, my father owning a plantation in Albemarle County, which is about the centre of the State. Of other counties I cannot speak with confidence, but in this one, we never found mistletoe except upon the oak."

Dead Trees in Louisville.—Messrs. Nanz & Neuner write, that there can be no manner of question that the water gas killed the Louisville trees; which, from sad experience in Philadelphia, even those who have not seen the trees, can readily believe.

Mistletoe in South Carolina.—Mr. H. W. Ravenel, Aiken, S. C., remarks: "In regard to the question of 'Student,' referred to in October number, about the host of the mistletoe, I will say that as far as I have observed in this region, the parasite is more common on water oak than on any other tree. Here in the streets of Aiken, there are

a great number of water oaks, and the mistletoe is the chief enemy, almost destroying the tree and greatly weakening its natural growth from the great numbers of plants on the limbs. During the winter, when the oak leaves have fallen, some of these trees have the appearance of being evergreens, from the green leaves of the parasite. I have seen the same thing in the low country of this State; sometimes also on other oaks, but most generally preferring the water oak. It is often seen also on persimmon and tupelo, but I cannot recollect ever having seen the mistletoe on any coniferous tree."

[The mistletoe has been found in some instances on the Scotch pine in the north of Europe.—Ed. G. M.]

Literature, Travels and Personal Notes.

COMMUNICATIONS.

GOOD WORDS FOR THE PRINOS AND HOLLY.

BY WM. T. HARDING.

Irving, in his love of nature, thus alludes to "the holly providently planted about the house, to cheat winter of its dreariness, and to throw in a semblance of green summer."

It was during the month of March, 1676, while the adventurous and hardy colonists were "subduing the wilderness of North America," that the unprincipled and prodigal fellow, Charles II, "by the grace of God (?)" was king;—And who from his flagrant profligacy, the chroniclers of his day dubbed the "Merry Monarch,"—pompously speaks of "our province of Nova Cesaria or New Jersey." And within the boundaries of the aforesaid State, at that early period, the leafy primeval spot among the pines, "and other sombre boscage," now known as Mount Holly, was then recognized by the good folks thereabouts as Bridge Town, and according to the natural fitness of things—when they "called a spade a spade"—was properly so called, from the number of bridges required to cross the circuitous Rancocas creek, which with many angles and singular sinuosities, seems to curve, twist, and turn most crookedly about the town, in its devious wanderings to find a way out.

From analogy, or, "what's in a name?" one would naturally expect to find some fair sized Holly trees, Ilex opaca, growing on the closely wooded "Mount," which majestically rises umbrageously above the highly cultivated farms and gardens which picturesquely diversify the landscape of the surrounding level country, and from which the pleasant town of Mount Holly is, or was, appropriately named. But disappointment awaits the man, however diligently he searches, who expects to discover any with larger stems than a few inches in diameter. That ubiquitous person, the oldest inhabitant, says, "there used to be some good sized trees of that kind, thereabouts, when he was a boy; which have since then been wantonly destroyed." Yet, in the woods bordering on the town, which unhappily, I regret to say, are now fast falling before the merciless strokes of the wood-cutter's axe, may be found a few examples of about from forty to fifty feet high, and from twenty-four to thirty inches in circumference. But by far the most handsome and portly tree I have seen anywhere in the neighborhood, measures three feet ten inches in girth, with a rather uniform head, which rises from a clean, straight stem eight feet high, and then branches off some twenty feet above.

As an old admirer of Hollies, I am prone to speak in their favor, and by so doing, if possible, rescue them from the neglect and obscurity to which they seem to have been so long consigned. And as the Prinos and Holly are in the same natural order, Aquifoliacæ, and like "The two Dromios," bear a strong family resemblance to each other, it would seem but proper to group them together.

When residing in the South, in ante-bellum times, the writer made a collection of the various kinds of Hollies and Prinos, which are readily found in the woods in that region; and, which when planted in the ornamental grounds, proved very interesting to all who had an eye for beauty. Ilex angustifolia, I. Dahoon, with I. Cassine, are as handsome low growing shrubs as are to be found in this country. And if well protected with other evergreens of more robust habit, might be made to contribute to the beauty of the lawn and shrubbery in colder sections than they are usually seen.

And their kindred Prinos', which are equally handsome shrubs, some evergreen, and some deciduous, of which there are about a dozen native species, all of which are much appreciated in European collections. Those possessing most interest for ornamental purposes, here, are P. glabra, as pretty a little shrub as is grown, with P. verticillatus, and P. lævigatus.

There is a general, though erroneous opinion prevailing, that nothing is more difficult to successfully transplant than the native Holly, I. opaca. The want of success may, I think, in most cases, be attributed to a lack of skill in the planter. If, for instance, a sturdy looking bush of good size and shape is found growing in shady thickets, as they usually are, and is transferred to some open space on the lawn, "where it will show well," and there left in full foliage, it is a doomed tree, and will soon be a ghost of what it once was, when "a glorious holly, so glossy and green." Now all this may be overcome by following Mr. Meehan's advice, as given in the July MONTHLY of 1878, which I quote in his own terse language, for the benefit of whom it may concern:

"The Holly has very sluggish roots, while its evaporating powers through its leaves are enormous. To be successful with transplanting Hollies, we have to regulate these extremes, which we do by cutting off the leaves in cases of doubtful success. We have never known a case where the leaves and half ripened wood were cut away, that perfect success did not follow, &c."

But as everybody knows who has given them a trial, nursery-grown trees, several times transplanted, are much to be preferred, and are really cheaper in the end, than those taken from the woods; and I would advise the planter to select them personally, or by catalogue, from some reliable nursery.

From what I consider the best nursery price list in the country, I perceive I. cornuta, the very handsome Japan Holly, one of the prettiest evergreens in cultivation, and perfectly hardy, with I. opaca, may be had at very reasonable prices; and of such, I would recommend all tree admirers to plant.

Of the European kinds of Hollies, which form such charming objects in the pleasure grounds, parks and gardens there—and in England espepecially—we must be content with seeing them there, as they are too tender for this climate. And yet, I have no doubt they would, under favorable conditions, succeed in the South. When grown in large pots or tubs, and housed in winter, o be brought out for spring, summer and autumn use, there is hardly anything more effective or beautiful, than variegated Hollies. Whoever has seen good specimens of the silver variegated Holly, I. latifolia, I. alba marginata, with the following named kinds, will have seen beautiful objects long to remember. To wit: I. argentea, the old silver variety, and the exquisite I. argentea elegantissima, with small creamy white foliage; I. aurantia, bronze-leaved; I. aurea marginata, with broad golden margins; I. versicolor, crimson and gold variegation; or the several green kinds, I. atrovirens, very dark glossy green, and I. lauritolia, with long entire laurel-like leaves; with many more attractive kinds.

However much we may admire them in these latter days, we can hardly be said to love and cherish them as did the people in earlier times. According to Pliny, "Tibertus built the city of Tibur near three Holly trees, over which he had observed the flight of birds that pointed to the spot, whereon the gods had fixed for its erection; and that these trees were standing in his own time, and must, therefore, be upwards of 1200 years old. He also tells us that there was a Holly tree then growing near the Vatican in Rome, on which was fixed a brass plate, with an inscription in ancient Tuscan letters; and that this tree was more than 800 years older than Rome itself." He also mentions a magnificent one in Tuscullum, with a trunk of 35 feet in circumference.

History also informs us that "the Holm, is the ancient name of the Holy tree (since corrupted into Holly), and was regarded by our ancestors as such, probably, from its use with that of the Ivy in decorating houses and churches, during the holy time of Christmas. But from pagan Rome, the custom seems to have been derived, of using it in the annual festival of Saturnalia, which occurred some time about Christmas."

And it was the policy of the early fathers to avoid shocking unnecessarily the prejudices of their newly-made converts. They assimilated the festivals of the Pagans and Christians as closely as possible, to these outward forms.

Of all legendary, or old historical trees, with the exception of the oak, hawthorn and yew, none possibly are invested with greater interest than the Holly. Both writers of fact and fiction have long made it famous. And, indeed, many are the sentimental subjects in which it appears, especially when referring to the happy events Christmas tide usually brings about. While in the rich and quaint ballad lore of the ancient bards, as well as the modern poets' rhymes, both berries and leaves

are often tastefully arranged in the pretty poetical garlands of these lovers of song. And the once popular ballad, "The Mistletoe Bough," which many gentle readers, no doubt, still remember how it conspicuously figured in the pleasant picture the poet gives of a Christmas holiday in the days of yore. And thus he sings:

"The mistletoe hung in the old castle hall,
And the holly branch shone on the old oak wall;
While the baron's retainers were blithe and gay,
Keeping their Christmas holliday;" &c.

It would occupy too much space to quote but a few of the many poetical allusions to the Holly. So the following must suffice, written in the reign of Henry VI. The ivy being dedicated to Bacchus, was often hung outside the door, as a Vintner's sign in winter, while "Holy" (or Holly) "stond in the halle."

"Nay, Ivy, nay, it shall not be I wys;
Let Holy hafe the maystry, as the maner ys.
Holy stond in the halle, fayre to behold;
Ivy stond without the dore; she ys full sore a cold.

"Holy and hys mery men they dawnsyn and they syng,
Ivy and hur maydenys they wepyn and they wryng.
Ivy hath a lybe; she laghtit with the cold,
So mot they all hafe that wyth Ivy hold.

"Holy hath berys as red as any Rose,
They foster the hunters, keep hem from the doo.
Ivy hath berys as black as any slo;
Ther com the oule and ete hym as she goo.

"Holy hath byrdys, aful fayre fok,
The Nyghtyngale, the Popyngy. the gayntyl Lavyrok.
Good Ivy! what byrdys ast thou!
Non but the Howlet that 'How! How!'"

Evelyn speaks of "stout walls of Holly, 20 feet high," which are common in England at the present time. As a hedge plant, both ornamental and useful, it has no superior. And many readers will remember seeing the handsome neatly-clipped hedges of I. Cassine, I. Dahoon, and I. opaca, about the better class of houses in the Southern States. And I see no reason why the last-named kind should not be used for similar purposes elsewhere. To form a beautiful or defensive hedge, living green screen, or wind break, it is much better adapted than are many things often so used. And for the pretty native birds, it makes a snug warm retreat during winter.

I am sorry I cannot refer to any fine specimens hereabouts, where I naturally look for them. The largest trees are often shamefully hacked and senselessly mutilated; which makes one think the foolish ones have an antipathy for them. The most magnificent old Hollies I ever saw, are still growing in Needwood forest, England, where for more than a thousand years they have stood the storm, and, the last time I saw them, they still seemed good for a thousand more.

Mount Holly, N. J., August 29th, 1885.

LOCAL NAMES OF PLANTS.

BY MRS. FANNY E. BRIGGS.

One of the first flowers I remember was the Lychnis Chalcedonica, Scarlet Lychnis, called in New England "Prince's Pride." In the West it is called "Bleed-hearts" and "Fire-ball." Chrysanthemums (C. Indica) were called "Fortune Plants." Tanacetum Balsamatea was "Patagonian Mint," in New England; at the West "Rosemary" and "Sweet Mary." One of the first house plants I remember was Saxafraga sarmentosa, and was called in New England "Strawberry Geranium," from the similarity of habit. In California this plant is "Beefsteak Geranium," and in Oregon simply "Beefsteak." In California this latter name was given to the beautiful Painted Cup (Castilleja coccinea). A beautiful Calochortus is called in California "Indian Potato;" in Oregon, "Cat's ear Lily." It is bright yellow, with densely bearded petals—the "cat's ears," I suppose.

In Pennsylvania and in the Western States generally, the low growing native Phloxes are known as "Wild Sweet Williams." Balsams are "Touch-me-nots," from the seed-pods. Asters are "Fall roses." Bachelor's buttons (Centaurea Cyanus) are known as "French Pinks," while the Globe Amaranth is "Bachelor's button," "French Clover," and "Winter Clover." Ixia Chinensis is "Blackberry Lily,"—a good name.

The old single Zinnias are called in Iowa "Youth and Old Age," a very good name, as the flowers do not wither or drop their petals, but stand a long time unchanged, except the fading color. The Molucca Balm, or shell-flower, was called "Shaker bonnets." Nicandra physalioides was "Bluebells" in New England; Mertensia Virginica are "Blue Gentians" at the West.

Many plants are called lilies; Irises, Erythroniums, and Trilliums are so called. In this region all kinds of Narcissus are known as "Easter Flowers." Polemonium cerulea is "Jacob's Ladder;" Myosotis, "Blue-eyed Mary." Our "Barberry" is a tree with small white flowers and black berries, with hard bony seeds. It is also called "Bear berry" from the fondness of that animal for the berries. [Rhamnus Purshianus.—Ed.]

Polypodium falcatum is known here as "Wild Licorice" and used in medicine like the true licorice. Lomaria Spicant is known as "Deer Fern." Sometimes the nurserymen are caught napping. A friend in Iowa had "Rose of Circassia" presented by a prominent dealer. It proved to be Rose Acacia; and a traveling agent in the same State, reading the names of the impossible

fruits and flowers from his big picture book, gave "Glory of Moses" as the name of his best moss rose.

I suppose we all appreciate a pretty and appropriate English name. When quite small I heard some yellow Everlastings called "Golden Eternal Flowers," and the beautiful name impressed me, child as I was. I wish that all botanical names were descriptive of the most prominent characteristics of the plants or their habitats. Even we who can only pick up here and there a crumb of knowledge could learn a great deal about them. I wish, too, that we knew the Indian names and their meanings; I suppose they are all significant in some way. I have heard that the Indians of this coast call the common Plantain by a name meaning "White-man's-foot," saying that it always follows his coming; and this scrap of knowledge gives a touch of poetic interest to the common plant. Does not every new idea, in the words of an old poet, "Give the soul sweet sense of larger room?"

La Centre, Wash. Ter.

EDITORIAL NOTES.

POSTAGE ON MONTHLY MAGAZINES.—Just why a weekly magazine should be carried by the United States Mail for a less rate of postage than a monthly, is not clear. It seems like one of those unjust regulations that are the more reprehensible for being thoughtlessly made.

If the excuse be offered that the United States could not afford to reduce both classes at once, the monthlies should have had precedence of the weeklies, it seems to us. They need more "protection," as the weeklies have the inside track where matters of news are concerned.

WATSON'S NURSERIES, BRENHAM, TEXAS.—The *Texas Gazetteer* gives great credit to this establishment. It is one of the leading industries of Brenham, occupies 200 acres, is the largest and the earliest nursery in Texas. It was commenced in 1860. The establishment is pronounced a great success, and its proprietor, Mr. William Watson, receives high praise for his excellent standing among his fellow-citizens in every relation of life.

JOHN THORPE.—It is announced that this well-known gentleman will be one of the Editors of the *American Florist.*

DR. REGEL.—This well-known gentleman, director of the St. Petersburg Botanic Garden, recently passed his seventy-first birthday. He was in early life but a poor garden apprentice, and the honors that have been showered on him are well-merited tributes to the energy and industry that have raised him to his great eminence.

ANDREW J. MOORE.—The GARDENERS' MONTHLY loses a very good occasional contributor in Mr. A. J Moore, of Berlin Heights, Ohio, who died on September 5th, within a few days of his fifty-fourth year. He was a rare lover of nature, and had just finished a home, which was to be surrounded with some of the best specimens of gardening. Though modest and retiring, he was a rare illustration of all that is of solid value in human character.

GEORGE W. CLINTON.—Among the recent deaths botantists will regret, is that of Judge Clinton, of Buffalo, N. Y., who died suddenly on the 7th of September, in his seventy-eighth year. Notwithstanding his age, he continued his botanical studies, and was found dead in a cemetery where he had wandered in search of plants. His father, Governor De Witt Clinton, was also a patron of botany, and is commemorated in Clintonia borealis and C. multiflora, North American plants of the Solomon's Seal family, the name having been given by Rafinesque. This was not thought to be a good genus at one time, and the plant was known as Smilacina borealis. Douglas then founded another genus Clintonia on a pretty blue Lobeliaceous plant from the Pacific coast, still known in some seed catalogues as Clintonia elegans. But when Rafinesque's name was adopted by botanists, and, under the rule, the later names have to be dropped, the Pacific plants were re-named and are now Downingia, so named by Torrey, after our famous landscape gardener, A. J. Downing. Judge Clinton was one of the most amiable of men, and beloved by all who knew him.

NEW WORK IN THE U. S. AGRICULTURAL DEPARTMENT.—Prof. Trelease has been engaged to work up the diseases of plants, Mr. Scribner to work up the microscopic plants, and Mr. C. H. Merriam will study birds—all in relation to agriculture. These are all steps in good progress.

MATERIA MEDICA.—A lecture by Prof. W. Saunders, before the Western University at London, Ontario, is full of interesting matter connected with the history of plants in their medical relationships. It is curious to look back over the beliefs of the ancients, and compare them with opinions now. The following is an extract from Mr. Saunders' lecture, and it illustrates the general scope of his remarks:

"The list of vegetable medicines in use at that time was large. In 1671 appeared 'Salmon's English Herbal,' a ponderous quarto of over 1,300 pages, profusely illustrated, in which there are described 752 herbs of English growth, including almost every variety of wild and cultivated plant and shrub then growing in Britain, and to most of them are ascribed virtues of an astonishing character. As a specimen, take the common garden sage. This is said to be 'hot and dry in the third degree, astringent, anodyne, carminative, digestive, discussive, diuretick and traumatick, cephalick, neurotick, stomachick, hysterick, arthritick, emmenagogick, sudorifick, alexipharmick and analeptick.' It is said to be good against a vertigo, lethargy, headache from a cold cause, palsie, convulsions, spitting blood, weakness of the nerves, poison, the bitings of serpents and other venomous creatures, the plague and other malarial and pestilential diseases, catarrhs, rheumatisms, &c." Some idea may be formed as to what is embraced in the *et cetera* by reading the succeeding pages, where details of the various preparations of this herb are given and their wonderful properties dwelt on. The preparations are, 1st, the green leaves; 2d, the juice; 3d, the essence; 4th, an infusion in wine or water; 5th, a powder of the leaves; 6th, an oil or ointment; 7th, a cataplasm; 8th, pills; 9th, a gargarism; 10th, a distilled water; 11th, a spirituous tincture; 12th, an acid tincture; 13th, an oily tincture; 14th, a spirit; 15th, a distilled oil; 16th, the potestates or powers; 17th, an elixir: and 18th, a conserve of the flowers."

ORCHARD AND GARDEN.—New gardening papers are coming out as thick as blackberries. Under the above title, we have the first number of a monthly. It is published (and we presume, edited) by J. T. Lovett, Little Silver, New Jersey.

POPULAR GARDENING.—This is the title of another serial candidate for popular favor in the gardening world. The first number appeared on the 1st of October. It is conducted by Elias A. Long, of Buffalo, is a monthly, and but 60 cents a year. Its aim seems to be to give numerous brief practical hints and notes about gardening generally and flower culture particularly.

SCRAPS AND QUERIES.

INTELLIGENT READERS.—We have before us a letter, giving some praise to our magazine for the general intelligence displayed by correspondents who write for it; and another correspondent calls attention to his copying a paper from our pages for an agricultural paper, but which was not "agricultural enough for its columns" in the opinion of the editor.

We often wonder at the idea of a farmer many agricultural editors evidently have. Sometimes they give wood cut illustrations, and generally he is depicited as a weather-beaten old dowdy, his clothing suggesting that he made a change of linen only once a year on Thanksgiving Days, and with a vacant stare on his face, as if even the sight of the alphabet would insult him. Now and then we find him painted as a frowsy looking subject for entomological study, at the end of a string attached to the hind leg of a hog, with the animal leading him on; and somehow our thoughts wander to that editor who is trying to lead that same old farmer in pretty much the same old slough. It is a queer association, but we cannot help it.

It is strange that a live agricultural editor should regard the farmer as but little above the beast that perisheth, with no other concern in life but his belly full of corn! Horticulturists are at any rate not of that class; you may not find one that is satisfied with mere husks of swine. We have always felt in managing this magazine, that we were dealing with the most intelligent circle in the community, and that it was a privilege to be admitted as a reader of the magazine into this circle. It is a real pleasure to find by these occasional letters that our efforts are appreciated.

WHERE TO LOCATE.—Mr. R. C. Poppey now complains that he has not been fairly treated in turn. He writes from Wilmington, Mass., that he can be found by any one who may "want to know where he is gone to," and that the postmaster at Elmira will give any inquiring mind his full address. He did come on "trial one month," and that trial was so satisfactory to Mr. Rawson that he remained one year with him. Mr. P. sends testimonials from former employers that his character and abilities are in every way satisfactory.

As we have been dragged into these personal matters, it is but fair that this much more be given.

Mr. P. protests that the only object he had was to offer the opinion that there was a good opening for a first-class florist in Elmira. If he had said that there were some florists in a small way, or florists of some other character with room for one with higher aims, or some such qualifications, his communication would not have been open to any criticism. But it gave the impression that there were no other florists of any kind at Elmira, and it was this impression that brought about the personal remarks, out of place in a journal like ours, and which we regret.

FORCING STRAWBERRIES.—Mr. Thomas Foulds, whose inquiries brought so many excellent responses on Forcing Strawberries, desires to thank friends for their prompt kindnesses. Through his distinguished employer, Mr. Wm. Singerly, proprietor of the Philadelphia *Record*, a large house has been built to test their experiences, and the results will be recorded in our columns. Mr. Singerly, like Messrs. Childs, Harding, and other owners of the leading Philadelphia newspapers, is a rare lover of gardening. He has over seven thousand feet of glass already on his grounds. It took this year over 30,000 plants to fill the flower beds in the garden.

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

AMERICAN POMOLOGICAL SOCIETY.

Address by Hon. Marshall P. Wilder, at the 20th Session of the American Pomological Society.

(Concluded from page 318.)

RULES OF POMOLOGY.

Nothing has afforded me more gratification than the favor with which our Rules of Pomology and the Reform in the Nomenclature of our Fruits have been received.

Soon after the close of our last session, we sent out a thousand circulars containing these Rules, together with the suggestions of the President in regard to the much-needed reform in the nomenclature of fruits. These were sent to the Agricultural, Horticultural, and Fruit Growers' Associations, and to the leading nurserymen of our country. Some were also sent to foreign lands. The favor with which these have been received both at home and abroad has been remarkable, showing that the time had arrived when, by general consent, this reform should be made; and thus our Society has the honor of instituting it as an example for the pomological world. When we reflect on the long, senseless, and sometimes vulgar and ridiculous names by which so many of our most beautiful fruits are known, our indignation is so aroused that we desire to blot them from our memory forever. Some have thought this spirit might be too aggressive. All reforms are more or less so; but when we think of the irrelevant and inappropriate names by which many of our fruits are known, we feel the importance of keeping up our warfare until the victory is won, and all our catalogues are purged of these improprieties. As I before felt, I still feel it my duty, as President of the American Pomological Society, to urge a reform in the names of fruits, avoiding all long, superfluous, inappropriate, indelicate, ostentatious, or unmeaning titles; and if we cannot change objectionable names already applied, at least to avoid them in the future. Hundreds of fruits once known in our catalogues have become obsolete for want of good properties, and so it will be in the future, and we shall retain only those which, by their excellent quality and adaptation to our situation and wants, are worthy of extensive cultivation. Like the Baldwin apple, the Bartlett pear, the Concord grape, and other renowned fruits, let such varieties be dedicated to perpetual remembrance by appropriate names, and thus let us hand down to future generations a system of nomenclature pure and plain in its diction, pertitinent and proper in its application, and which shall be an example, not only for fruits, but for other products of the earth. Let us have no more names of generals, colonels, captains, presidents, governors, monarchs, kings or princes, mammoths or Tom Thumbs, or such titles as Nonsuch, Seeknofurther, Ne-plus-ultra, Hogpen, Sheepnose, Big Bob, Ironclad, Legal Tender, Sucker State, or Stump-the-World. These were suggestions made in my last address, to which I still adhere and from which I have nothing to take back. The terms Pearmain, Pippin, Beurre, Doyenne, Bon Chretien, etc., applied to apples and pears, once described classes of fruit which are now so confused and blended that the names have lost their significance. The cases are very few where a single word will not form a better name for a fruit than two or more. These reforms have been adopted in the Catalogue of the American Pomological Society, and other prominent horticultural and pomological societies have voted to adopt the improved nomenclature, and I desire to ask the cooperation of all pomological and horticultural societies in this and other countries in carrying out this important reform. It has been suggested that the work might be carried farther than has been done in the catalogue of the Pomological Society; as, for instance, by substituting

Lucrative for Belle Lucrative, and Nelis for Winter Nelis. Pomologists may differ as to how far the reform should be carried, but by comparision of views they will come to a final agreement.

I desire especially to enforce upon nurserymen the duty of aiding in this reform, by revising their catalogues so as to correspond with the improved nomenclature. Horticultural and pomological associations have thus far been our most powerful auxiliaries in this good work, but they do not come in contact with the people at so many points as the nurserymen whose catalogues are distributed broadcast over the land, and I would especially appeal to the many honorable representatives of this profession here assembled, to give us their hearty cooperation until the work is accomplished. Let us push on the work so constantly and vigorously while we live, that future generations, seeing its advantages, shall avoid the evils we have encountered, and shall enjoy the benefits of the improved system, and look back with gratitude to us for our labors.

PRODUCTION OF NEW FRUITS.

And now in fulfillment of my promise to urge upon you while I live, the importance of producing from seed, new improved varieties of fruits, adapted to the various soils and climates of our vast territory, I have substantially to repeat what I have said in my former addresses. These are the means, and the only means, which God and nature have provided for the improvement of our fruits, and the better we understand and practise them the nearer shall we approach to that divine beneficence which gives flavor and richness to our fruits, and to the senses the highest types of beauty, grace, and gratification.

Thus from time to time I have spoken to you, and, were these my last words, I would again impress them upon you as of the utmost importance. With a careful study of the tendency of varieties, and a judicious selection of parents, as breeders, we shall go on to produce fruits which will be adapted to every climate or condition of our land where any species of fruit may be grown. When we see what nature has done without the aid of manipulation—in the cold regions of the North, as in Russia, from whence came the Oldenburg and Tetoftsky apples, the Black Tartarian cherry, and other good fruits, as seen by Professor Budd and Mr. Charles Gibb, who can doubt our ability to produce fine fruits even in the colder regions of our country?

When we consider that the art of crossing varieties for their improvement was scarcely known until our day, and see what wonders have been accomplished by it, who can doubt that we may yet produce a pear with the richness of the Seckel, the form and size of the Bosc, and the vigor and productiveness of the Boussock. And so we may go on to improve other fruits, until all shall be made as perfect as ever were grown by "the grand old gardener" in Eden. But to do this we must study the characteristics of varieties, and thus help nature to perfect this work.

Thus Providence has placed in the hands of man a power to assist nature in the production of her most perfect and beautiful creations. And whatever some may think of variation, evolution, transmutation, or transformation of species, the great fundamental laws of life and its reproduction will remain unchangeable and immutable as long as the earth bears a plant, or a tree yields a fruit, or nature holds her place in the universe.

Nature is a kind handmaid, and, by her lovely creations, is constantly inviting us to come up and assist in her glorious conquests. Her voice is heard throughout the earth. To us, she says: "Come up and sit with me, and you shall have plenty and perfection. Come, and I will give you fruits which shall delight the eye, gratify the taste, and satisfy your souls."

O! Yes! Thou Queen of Grace,
We'll come and take thee at thy word;
We'll take thee, Nature, as a bride,
And, hand in hand and side by side,
Our loves and labors we will join,
And bless the hand that gives us thine.

We have now many excellent varieties of fruits from foreign lands which are suited to many of the soils and climates of our country. But when we reflect upon the number that have proved worthless, and are not suited to our condition, and consider the large number of good American sorts that have already been raised, we are forced to the conclusion that we must, hereafter, rely mainly on the production of new varieties from seed to supply the necessary kinds for our constantly increasing territory for fruit culture. We therefore rejoice in the great interest which has been awakened in this subject, so that what was a few years ago considered by physiologists and philosophers a mysterious art or science, is now practised extensively by cultivators in the various families of vegetable life. And now that we have the knowledge of this art, there is no limit to its use for the improvements we may desire. And, strange as it may seem that the knowledge of this process of helping nature was withheld from us until our day, it is capable of indefinite application as long as the sexes of plants shall be known, and is

the only means to revolutionize and improve the fruits of the earth.

When we reflect on the improvement which has been realized by cross-fertilization in the various species of the vegetable kingdom, we can scarcely fix a limit to its potent influence for good on our fruits. And we may thus go on from one degree of excellence to another until we shall produce fruits as fine as were ever grown by our father in Eden. Go on prospering and to prosper in this most promising and beneficent work. You can do nothing better for the generations that are to follow us; and so again, with line upon line, and perhaps for the last time, I leave with you my old injunction: "Plant the most mature and perfect seeds of the most hardy, vigorous, and valuable varieties; and as a shorter process, insuring more certain and happy results, cross and hybridize our finest kinds for still greater excellence." Go on! Go on! while you live, and when we are gone, others will rise up to chant our old song:—

Plant the best seeds of all your best fruit,
Good fruits to raise that some lands may suit;
Fruits which shall live their blessings to shed,
On millions of souls when you shall be dead.

Plant! plant your best seeds—no longer doubt
That beautiful fruits you may create;
Fruits which, perchance, your name may enshrine,
In emblems of life and beauty to shine.

Thus have I summed up some of the most important considerations and suggestions of my former addresses, thinking that I could do nothing better than to call your attention to them again, and reënforce them as principles upon which must depend the successful prosecution of our work.

And now, gentlemen, in conclusion, let me again congratulate you on what our Society has already accomplished. "The past is secure;" but the great duty still remains of extending, fostering, and rightly directing the pomology of our country.

Other societies have arisen, and will continue to arise, and help forward our noble designs; but the American Pomological Society will still bring together the most distinguished cultivators of our land, and will be the great head, guardian, and guide of the pomology of this western world. When we reflect on what has been accomplished in the thirty-seven years of its history, and think of the immense territory in our favored land which is yet to be occupied with fruit culture, and of the increasing demand for these products so necessary for the health and happiness of life, we feel the great responsibility which rests on us as protectors and conservators of one of the most important branches of American husbandry. Let me then urge you to persevere in this work and preserve our bond of union throughout the land. "Union is strength;" and in nothing is this better illustrated than in the associated efforts which have given such influence and importance to our Society. Perpetuate it, that the blessings which it confers may go down to posterity, and grateful millions shall bless the memory of those who laid its foundations, and shall aid in carrying out its benevolent designs. Think once more, my friends, of the great blessings which you may confer on mankind by the multiplication of good fruits. Next to saving the soul is the saving of health, and I know of no better means than an abundant supply of ripe fruits.

Fruits are the overflow of nature's bounty; gems from the skies which are dropped down to beautify the earth, charm the sight, gratify the taste, and minister to the enjoyment of life; and the more we realize this, the more shall we appreciate the Divine goodness to us, and the duty of providing them for others.

Like morning's first light, that gladdens the sight,
So may the best fruits spread over the earth.
And when we shall reach that still fairer land,
And round the life-tree in mercy shall stand,
May each pluck its fruit, and nevermore feel
The serpent's sharp tooth, once close at his heel.

EDITORIAL NOTES.

PENNSYLVANIA HORTICULTURAL SOCIETY—FIFTY-SIXTH ANNUAL EXHIBITION.—The marked improvement that continues to be seen in the culture of plants, fruits and flowers, which this Society has done so much through its long life to foster, still continues in evidence from this year's exhibit, and must be very gratifying to the members of the Society. The art of growing things well is supposed to be an European specialty, which the gardener leaves behind him when he lands in America; but many of the specimens here were grown in a manner that even a prize-master in the old world might envy. The chief novelty was in the superior culture; for of the kinds of fruits or flowers there was scarcely anything that attendants on former exhibitions had not seen before.

Passing through in our search for novelties, in kind or culture, we were attracted by a plant of Abutilon Sellowianum in its marbled and variegated form, exhibited by John Nisbet, gardener to Mrs. D. Jayne. Though only about 9 inches by 9, it was a dense mass of foliage, with yellow marblings on green ground. Most of the Abutilons have a straggling habit.

Mrs. D. B. Worrell had a plant of Epiphyllum latifrons in flower, which the officers of the Society had labelled "Night-blooming cereus," and the public were educated to believe that the famous old favorite was before them in this miserable counterfeit.

Joseph Kift & Sons made their usual exhibit of articles to aid floral decoration. One of the prettiest on this occasion was, little golden baskets attached to polished black slate slabs, with easel supports. These baskets are filled each with a small bouquet. In the filled illustrations, ferns chiefly were employed.

In several collections, and especially that of Jos. W. Metz, were plants of the Asparagus plumosus, a plant belonging to the florists' "Smilax" family. It is mist-like and green, and will for years keep popular. There was much novelty in this collection, though the plants might not be quite as well grown as in some others. A variety of the old Gesneria discolor, known as G. nigrescens; and the Campylobotrix Ghiesbrechtiana, with very pretty green and silver marked leaves, which are rosy below, are plants that are not often seen. The ferns in this collection were very well grown. A Microlepis hirto-cristata in a 12-inch pot, had three dozen fronds, and after rising 2 feet drooped very gracefully. Adiantum concinnum, A. laetum, A. amabile, and some other favorite species formed dense plants about 2 feet by 2. A Nephrolepis tuberosa had fronds about 3 feet long, and only 2 inches wide, forming a striking object. The remarkable plant, Dracæna Goldiana, which has green-barred leaves on gray ground, was in this and many other collections, showing its growth in popular estimation of cultivators. Echeverias by the same exhibitor were attractive. As probably desirable for carpet bedding, we noted E. navicularis, and Sempervivum Californicum, both of which had the gray-green leaves, rosy-tipped.

The prince of good cultivators, however, is Mr. John Warne, gardener to Clarence H. Clark, Esq. Imagine among ferns Adiantum gracillimum about 2½ by 2½ feet, with millions of little frondlets, which it would drive one crazy to count. Nephrolepis davalloides, one of the crested ferns, with fronds only about 4 inches wide, but about 3 feet in length, terminating in regular "crow-feet. It is one of the most striking of all ferns. A stag's-horn fern, Platycerium alcicorne, with over a hundred fronds, and one of the pretty climbing ferns, Gleicheina spelunea, is one of the most graceful of the family. The pinnules are less than a quarter of an inch wide, but range from 2 to 4 inches long. An Asparagus tenuissimus in a 15-inch pot was about 4 feet high by 3 wide. Even common things are not neglected by this good cultivator. Imagine a Sago palm only about 6 feet high, and yet with no less than 50 fronds of 3-feet lengths on it, and a a palm, Latania Borbonica, with a trunk of only 18 inches high, bearing nineteen huge fronds.

Mr. Charles Fox had also some well-grown palms. A Latania with nine fronds, a Sago with fifteen annual rings in a growth of 3 feet, and a very pretty species of Date palm, Phœnix rupicola, in a 15-inch pot with fifteen fronds; the whole plant making a specimen about 4 feet by 4.

Fergusson Sons' collection was rich in Crotons. The Queen Victoria being particularly striking because of the rich crimson tints among the green and gold. Somewhat of novelties here were Anthurium crystallinum, a plant of which about 2 feet diameter had no less than eight of its white-veined green leaves, and the still rarer Anthurium Veitchii. There is no variegation in this, but the leaves are peculiar among aroids for their length in proportion to their breadth, about 18 inches by 5 or 6, and the veins have the fashion of starting on a downward incline, and then recurving upwards towards the edge. It is a very pleasing style of leaf to those who love to study the elements of beauty in lines and curves.

There are few prettier things than ferns and leaf plants, and yet one misses the beautiful flowers that used to grace exhibitions in the olden time. Craig Brothers were up to the modern times by beautiful ferns—in a splendid specimen of Adiantum caudatum, with fronds but once pinnate, and yet 2-3 feet long; but they brought back old memories by mixing flowering carnations through the ferns.

Mr. E. D. Sturtevant had one of the best novelties in the shape of cut flowers of Zanzibar water lily, Nymphæa Zanzibarensis. This is a deep blue, and about 10 inches across. It is nearly double the size of the better known blue lily, N. cœrulea. The rich red Nymphæa Devoniana, and the lighter pink Nelumbium speciosum, were also in the collection.

Mr. Charles D. Ball deserves compliments not only for good plants, but for neat labels, placed on long slender stakes, which anyone could read without having to hunt for the ordinary pot label, and which even when found, requires often a post-office clerk, gray with age, to make out. If one tires of the continuous maiden-hair style of ferns, here there was relief in a plant of Hymenodium

crinitum, a kind with a sort of cabbage leaf texture of frond, covered with dense black bristles, and there was a green and not gray form of the Stag's-horn fern, and the rare illustration of the same genus in Platycerium grande, with the barren fronds running into the fertile, and which gives one of the peculiarities to this pretty species.

In the collection of Mr. W. Joyce, gardener to Mrs. M. W. Baldwin, we noted particularly a specimen of the Chusan palm, Chæmerops Fortunii. It was a bushy specimen about 5x4 feet, and has a sort of "Bambooy" look in its narrow frondlets. It is said to be capable of withstanding several degrees of frost. Mr. Joyce is famous for the excellent manner in which he grows the pretty feather-leaved Marantas. A plant of M. Porteana about 2 feet by 2, had a dense mass of leaves overlapping each other like shingles on a barn. The old-fashioned M. vittata, which few people can grow well, was here in a specimen about 3 feet by 3. The strange class of plants allied to the Sago, and known as Encephalartos, and which are getting popular, for all their scarcity, was represented here by E. villosus. The fronds are only about 12 inches wide, but were 5 or 6 feet long. They look like fern leaves turned to blue stone.

The old style of growing Caladiums in deep shade and moist heat, by which the leaves were drawn and the colors dull, is being abandoned, and the bright and stocky specimens here exhibited proves it. There were so many good ones, the judges must have had a hard time to decide which was the best collection.

A specimen of Mons. A. Hardy, which we regard as one of the brightest and best, had over seventy-five leaves, and was about 3 feet by 3. Clio is another variety that struck our fancy. The same exhibtor, Mr. Warne, gardener to Clarence H. Clark, Esq., had a specimen of the well-known dwarf kind, C. argyrites, in a pan about 2½ feet over, and which we should hardly like to be set to count the leaves, under penalty to finish it in a quarter of an hour. Speaking of the Encephalartos tribe, and Sago palms, Mr. John Dick, Jr., had one of the family in Zamia glaucum, that attracted much attention.

The absence of flowering plants came near being atoned for in a collection of leaf Begonias by John W. Metz. The improvement in these pretty plants seems to have fallen off, yet they are lovely—a kind known as Pierre Walter, though not new, would make a grand exhibition plant, if taken in hand and grown well. And H. A. Dreer brought us up to the point of admiration by actual flowering plants of the tuberous Begonias. Florists have given up naming varieties, as from seed no two are alike. The kinds are as infinite as a lot of Pansies. These of Dreer were about 50, in 6-inch pots, all different and beautiful.

H. A. Dreer had also some novelties in his collection. There were a variegated Bougainvillea, and the old variegated Hydrangea, scarce enough now to be "novel," and a pretty aroid named Phyllotænia Lindeni. It was in a 10-inch pot with about 50 leaves each, 6 to 10 inches long, and the white veins on the leaves disposed fish-bone fashion.

Mrs. Annie Bissett had a nice collection of some hundred ferns in 3 or 4-inch pots, by which we might see how many more kinds might be made pets of by cultivators, besides the stock kinds everybody is rushing to grow. Woodwardia orientalis, Notholæna sinuata, and Adiantum hispidulum are evidently kinds worth looking after.

Cut flowers in the shape of designs, and table, wedding, and funeral ornaments were abundant, though with little that we can note by way of novelty. A church made of flowers by Graham showed how useful the faded brown of the Hydrangea paniculata is in making stone walls. H. D. Nesbit, and Sheafer's work told how useful the leaves of European Ivy are still in making background in some styles of work; while for background work R. Scott & Sons use effectively the Christmas ferns, Aspidium acrostichoides. Craig Bros. are making good use of a small white Dahlia named Guiding Star. It is not over two inches across, and very double, and the same firm use with admirable effect the darker China asters, among maiden-hair fern. They had also some good work made up of Geranium flowers, and we should not be surprised to find some day some one hitting on a combination that will make Zonale Geraniums more popular than they are now for cut flower work.

Pennock Bros. showed how beautifully the Bennett Rose matched Niphetos for drooping "drapery" in cut flower work. In cut roses there were many fine exhibits, but no particular novelties. In Charles F. Evans' set there were flowers of American Beauty that measured 5 inches across, and were quite double when expanded. The two names are superfluous, and probably the "Beauty" is all it will get in the busy haunts of trade. The Bennett in this collection was nearly single when full blown, but this does not detract from its great beauty in the bud, and "buds" are all a rose lover wants.

The collections of miscellaneous cut flowers ex-

hibited little new. Perhaps the re-appearance of the good old coxcomb in Mr. Walter Cole's collection may be so termed. But the single Dahlias in the collection of Fergusson's Sons were truly grand. Nothing that has appeared for many years has been so little over-praised as these.

Conrad Kirchner had a new seedling carnation of some merit, but without a name. It was a light salmon with a few flakes of darker tint here and there.

In fruits there was a remarkable paucity for this famous Society. The Globe peach on exhibition showed it to be much later than we supposed when we had it first before us. A grand collection of hot-house grapes from David Allen, gardener to R. M. Piatt, of Boston, made up however for the absence of much that might be mediocre. We are sorry that the weights or measurements of the bunches were not displayed with the fruit. The bunches had however nothing remarkable in size to one who has seen a Pennsylvania exhibit for many years, but the berries were remarkable for size, and in a perfect and thorough ripening we have rarely seen their equal. We do not remember anything so superb for many a long day. Some much larger bunches were on exhibition from Mr. G. Huster, gardener to Mrs. Heyl, and from Mr. Duncan Rhind; the latter had Black Barbarossa, about 2 feet long by 1 wide. Fergusson Sons had a very nice collection of hot-house grapes, and we were reminded of the old controversy as to the distinctness of Prince Albert from Black Barbarossa by a bunch of each side by side. The former has a somewhat looser bunch.

The February Meeting.—It should not be forgotten that silver and gold medals for the best twelve and best six Hyacinths grown in glasses by ladies only, will be awarded at the meeting of Feb. 16, 1886. One need not be a member of the Society to be a competitor for these premiums.

NEW YORK HORTICULTURAL SOCIETY'S CHRYSANTHEMUM SHOW.—This will be on the 4th, 5th and 6th of November, in Horticultural Hall, 26 West 28th Street. It is expected over 700 varieties will be on exhibition, and one grower promises to have a flower for inspection, 21 inches in circumference. Mr. Jas. Y. Murkland, 18 Cortlandt St., is Secretary, and can give further particulars.

MASSACHUSETTS HORTICULTURAL SOCIETY.—At the recent annual meeting for the election for officers, Dr. Henry P. Wallcott was elected President for the ensuing year.

Judging by a newspaper slip kindly sent to us by the Secretary, the fifty-seventh annual meeting must have been one of the most successful. The list of premiums awarded alone occupies nearly two columns of the newspaper. Among the peculiarities of general interest we note the common names of some rare greenhouse plants. The Devil flower is Alæcia cristata. Baby flower is Odontoglossum grande, the lip looking like a young child; and the Dove plant, Peristeria elata. These are Orchids from Mr. Ames' collection. Two new foliage plants, Croton chelsoni, and Alocasia Sanderiana, are produced, desirable aside from their being novelties. They were from David Allan, gardener to R. M. Pratt. The same gentleman had a magnificent collection of hot-house grapes, among which a white Syrian weighed 6 lbs. 1 oz., and an Alnwick seedling 5 lbs. 5½ oz. In the collection of miscellaneous cut flowers, the number is limited to 100 kinds in bottles. H. B. Watts had first premium for these, James Cartwright second, and Edwin Sheppard third. In Dahlias, the premium was awarded to Edwin Sheppard for the best single named variety, but what that variety was, is not stated, nor through the long list of premiums awarded can we glean any information of quality or kinds that would be very instructive to our readers.

In Pears, however, we note that Mr. John McClure's 12 specimens of Bartlett weighed 7 lbs. 3 oz., 12 from Mrs. Mary Langmaid, 6 lbs. 12¼ oz.; the third premium to N. D. Harrington, 6 lbs. 11½ oz.; fourth to A. S. McIntosh, 6 lbs. 9 oz. The weights or peculiar excellencies of the exhibits of others are not given.

MEETINGS OF LOCAL HORTICULTURAL SOCIETIES.—It has often been remarked that the managers of local horticultural meetings, make great mistakes in getting some three-story, or other room, in which refined and cultured people will not assemble. The very best rooms in a town should be engaged, and made attractive to the best people, if horticulture is to have the best patronage essential to its success. A strong point was made of this by Mr. L. B. Pierce, of Dayton, before the American Pomological Society, who favored meeting on the private grounds of some patron of horticulture.

CHRYSANTHEMUMS SHOWS.—The taste revived during the past few years, for Chrysanthemum growing, has been much fostered by the exhibitions of the Massachusetts, New York and Pennsylvania Horticultural Societies. We should be glad to aid and assist all of these bodies, but the Secretaries seldom call our attention to their meetings until after we go to press, when of course too late to make any note thereof.

Only now in the last moment has our attention been called to the meeting of the Pennsylvania Horticultural Society which takes place on the 10th, 11th, 12th and 13th of November. The schedule of premiums foots up several hundreds of dollars. A novel feature is a class for "subscription fund" premiums. Only those can compete here who deposit $20; and the 1st premium $100. We suppose if there be only one entry here the Society pays $80.

Hallock Son & Thorpe offer $10 for the best new seedling. If there is anything in a liberal and very varied schedule of premiums, there will be a grand exhibition on this occasion that it will be well worth any one's while to see.

NEW ORLEANS EXPOSITION.—This, which now takes the name of North, Central, and South American Exposition, will open on the 10th of November and continue till 31st of March. The New Orleans people had excellent experience last year, and the forthcoming exhibition is expected to exceed the past in many respects.

F. J. Scott

THE

GARDENERS' MONTHLY

AND

HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXVII. DECEMBER, 1885. NUMBER 324.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Twenty-eight years ago the Editor took pen in hand to prepare the first number of the GARDENERS' MONTHLY. It has been a long term of very hard but very pleasant work. Large numbers of those who subscribed and read what he then wrote have since gone to their long homes, but the homes of those who have taken their places are still to be made beautiful. The elements with which we make beauty are ever new, so that we not only have new readers, but have constantly new things to say to them. But sometimes the old will bear repetition. An old sermon is often as profitable as a new one, and from what we see around us it is worth repeating that thinning out at this season should be the rule in every well-ordered place. Trees and shrubs must be planted thickly at first, or we have to wait half a life-time for shelter or fine effect. A few should be taken out every year. Sidewalk trees especially are almost always too thick after some years. Where the trees are not entirely taken away, judicious pruning is an advantage. Branches should be cut close to their source, so that the wound may heal over. If the scar is large, paint it. The rotting of wood after a branch is cut off often starts decay in the whole tree. Weakly and weatherbeaten evergreens are improved by pruning. But in their case the leader must be cut at the same time, even though we have to train up a side branch to make another leader. Sometimes rare evergreens raised from grafts or cuttings, show little disposition to make leaders, but they will do it if severely pruned. Poor evergreens are improved also by a top dressing of very rich manure. The spruce family are great lovers of shelter. Where winds are keen and cutting, pines should be employed. The White Austrian and Scotch are still the most approved. For dwarf evergreens to stand wind, nothing equals the dwarf mountain pine. What is known in nurseries as Mugho pine, Mountain, and Dwarf pine, are all forms of one thing. Pinus Cembra is a beautiful plant for cutting by windy situations, and intermediate in growth between the dwarf and the larger pines.

Manure is good for lawns and flowers in beds for the summer, and this should be remembered at this season.

If not yet done, gather in the "bag-worms," especially from evergreen trees; and where the soft cottony cocoons of the Orgyia or "cotton caterpillar" are sheltering on the rough bark of trees, destroy the eggs with a hard brush. Birds are all right to help keep down insects, but a little hard labor is also excellent.

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Variety is always pleasing, and at this season study a little how to have differences from last

year at little cost. It is often as easy to have change at a small expense, and as pleasing, as when a large sum is involved.

It is a pleasure to note the progress of taste in ornamental gardening. Railroads and public establishments were at one time the leading exemplifications of beastliness in their horticultural surroundings; now they often lead off in garden beauty. Summer boarding-houses for fashionable people were also until recently far back among barbarians, but many of these now have beautiful gardens and grounds. Altogether, we feel proud of our twenty-eight years of labor; for surely we must have had a hand in this progress.

COMMUNICATIONS.

A LADY'S ROCK GARDEN.

BY MRS. J. S. R. THOMSON.

My rockery, which I at one time believed could not be excelled, was built with long, irregular moss-covered gray boulders—so large that but one could be hauled at a time—old stones that looked as if they had weathered the storms of a century. I have two large bay-windows to my two finest drawing rooms. The house is full four feet from ground, which gives me a brick foundation under the bay-windows, eastern and western exposure. Here, thought I, will I build a rockery, not like masons build a stone fence, but irregular and picturesque. I went about it heart and soul, hauled my rock and soil, occasionally getting fine specimen ferns, all native. When everything was completely collected, I got three big strong negroes, and crow bars, and went to work. First I took my very biggest and roughest stones and made a circle, conforming somewhat to shape of bay window with them—digging out deep holes to sink a side of rock in to make steady. When that was arranged to my satisfaction, I had the earth dug deeply inside of a circle about two feet, and fertilized exceedingly rich, knowing full well that I would never again be able to do it, so I did it well at first; then threw in wagon-loads of soil. Mind, this was a big rockery—bay-window is large, and this was four feet larger outside—which gives me a generous space to work on which filled to almost top of lowest rocks, being fully two feet. On this I began an inner circle, like a terrace, of smaller rocks than for first course, but still large, none smaller than a bushel measure. When arranged, filled in with rich soil. Again in centre, directly under middle window of the bay-window, I hoisted my largest and choicest boulder, leaning it up against the wood work of the house, and then was ready to begin my planting. I took my man servant, horse and wagon, baskets, and went for our native plants, collected it full of Sanguinaria, anemones, butter cups, wind flowers, Osmundia regalis, Adiantum and other ferns, seven varieties, I do not know name of, in every crack and crevice where a plant would grow. I planted Thrift, Sedums, Saxifraga, Lily of the Valley, Violets, Lycopodiums, Mosses, and my ferns and a great many roots of Ampelopsis Veitchii, myrtle or vinca. Oh! my flower-loving friends! that is the only real picturesque spot in my vast yard. It has been made for ten years, and every year the stones have grown gayer and mossier, and more attractive. Lily of the Valley is fairly outdoing itself, ferns for every time I want them, Violets that waft sweet perfume to our eager senses; not only every rock with delicate sprays of the Ampelopsis clinging to them, but it has left that and gone on up the wood work of the bay-window—between the sash—high up to the top of windows, whence it clambers to other portions of the house. It took two or three seasons to get well established, and now "it's a thing of beauty and a joy forever," does not require much work to keep in order—hand picking and a gentle forking amongst plants with thick mulch in winter make it continue to be beautiful to date. *Spartanburg, S. C.*

THE BEST NEW ROSES TO BE SENT OUT NOVEMBER 1st, 1885, IN FRANCE.

BY JEAN SISLEY.

Tea, Marquise de Vivens (Dubreuil).—Very free bloomer; beautifully shaped, large buds; very dark bright rose, edged yellowish white. Outside of the petals white, slightly yellowish; semi-double, fine scent; only very fine in buds.

Tea, Comtesse de Frigneuse (Guillot).—Free bloomer; very fine shape, medium size; nearly full, fine scent; very bright pure yellow; very fine buds. First rate.

Tea, Souvenir de Madame Helene Lambert (Gonod).—Yellowish pink, centre darker; medium size, full, fine shape; free bloomer. Sarmentous.

Tea, Souvenir de l'amiral Courbet (Pernet).—Medium size, nearly full; dark rose, free bloomer. Not very vigorous.

Tea, Madame David (Pernet).—Vigorous, flowers large; nearly full, delicate rose, sometimes shaded light salmon, edged white.

Tea, Edmond de Biduzat (Levet).—Flowers large, full, fine shape; very light fleshy pink. Very fine in bud.

Tea, Claudius Levet (Levet).—Very vigorous, flowers large; carmine rose, edged purple, centre slightly yellowish. First-rate.

Tea, Marguerite Ramet (Levet).—Vigorous, flowers large, full, fine shape; very fine vivid rose; centre lighter, slightly shaded, light carmine. Very fine bloomer.

Hybrid Perpetual, Rosieriste Chauvry (Gonod).—Flowers large, full globular; very fine shape; bright light crimson; free bloomer.

H. P., Souvenir de Victor Hugo (Pernet).—Vigorous; flowers large, nearly full globular; light brilliant rose; very fine bloomer.

H. P., Clara Cochet (Lacharme).—Flowers very large; globular, full, very fine shape; very bright rose; centre darker. Extra fine only in dormant buds.

Dwarf Perpetual, Polyantha Floribunda (Dubreuil).—Flowers size of those of Anne Marie de Montravel; very full, large trusses; abundant bloomer; delicate rose, shade white; very hardy and bushy.

H. P., Polyantha Max: Singer (Lacharme).—Very vigorous, sarmentous. Flowers size of those of H. Bon Hermosa, large for the species; bright dark cherry red, or vivid light crimson. Very free bloomer. Splendid plant for an isolated position, and has the advantage of throwing out no suckers. Quite different from all the Polyantha. *Monplaisir, Lyons, France.*

INJURY TO ROOTS FROM COAL GAS.

BY N. ROBERTSON.

Since sending you my experience with gas on roots of trees, I have come across the following article in the *Gardeners' Magazine*, which some of your readers may not see. It says: "Cuttings of willows, the lower ends of which were placed in flasks containing a little water and filled with coal gas, developed only short roots, and the buds on the upper part died shortly after unfolding in the air. Of ten plants in pots, amongst the roots of which coal gas was conducted through openings in the bottom of the pots, seven died in four months. To show that the plants were killed, not by the direct action of the gas, but in consequence of the poisoning of the soil, several were made with earth through which coal gas had passed for two or three hours daily for two and a half years. The rootlets of seeds sown in this soil remained very short and soon rotted. These results sufficiently account for the fact that trees planted near gas pipes in streets so often die. The enclosing of gas pipes in wider tubes having openings to the air, through which currents could be maintained by artificial means, has been recommended as a remedy." This is similar to my suggestion offered about enclosing the pipes in some kind of cement. Openings could be left to the surface in the same manner, by insertion in the cement of short lengths of pipes. There is no doubt where the soil has been once impregnated with the gas, it is fatal to vegetation, and its renewal for a large space around will be necessary to ensure success after this precaution is taken; and, perhaps, if your complainant will remove as much of the soil as he possibly can, and renew it, he may yet save his trees. *Sup't Gov't Grounds, Canada.*

SOUTHERN-GROWN ROSES.

BY CHARLES HENDERSON.

Mr. A. Oelschig, of Savannah, Ga., in the November number of THE MONTHLY, takes exception to some remarks I made at Cincinnati in regard to Southern-grown roses. The remarks in question, which were made in a private conversation, and not to the Society, were simply a relation of our experience with one thousand plants which we received from Savannah in the early part of December, 1884. They were all Hybrid Perpetuals of the following kinds: Baroness Rothschild, Magna Charta, John Hopper, Paul Neron, Jules Morgottin, and several other similar varieties. They were large, fine looking plants, averaging three to four shoots each, which were apparently fairly well ripened. We potted them, and placed them in a cold sunken pit, alongside of the same varieties of imported (English) stock, received about the same time. The conditions under which they were situated were thus exactly the same, and they had a fair comparative test. About Februnry 1st the Southern plants began to turn black at the ends of the shoots, and the blackening extended down the shoots to the crown as the season advanced. Before we got through fully one-half of the thousand plants proved a total loss, and many of the others were injured. Some few seemed all right. In the same frame, and under precisely the same conditions, the English stock wintered splendidly, and we did not lose one plant in a hundred. There was no mistake made in the handling of them, as we have grown roses in those same pits with unvarying success for the last ten years. One of our

largest cut flower growers in this vicinity, who received some of the same stock at the same time from the same source, had a similar experience to ours, or very nearly as bad, his loss being about one-third. Mr. Oelschig, in his article, states that the roses in his State are in vigorous growth and full bloom as late as the end of October. Now, with this condition of affairs, I fail to see how a thorough ripening of the whole plant, root and top, can be achieved so as to be fit for delivery by December 1st, and later than this would not do for us Northern florists. All experienced growers know that a "ripened" condition of the whole plant is necessary with Hybrid Perpetual roses lifted from the ground before they are in perfect condition. I do not condemn the Southern-grown roses sweepingly, for if the conditions of soil and climate are such as to enable the plant to become properly "ripened," then there is no reason why the South should not compete with Europe in roses from the open ground; but unless they are thoroughly ripened failure more or less is certain to follow. It is just possible that these two lots of roses were injured by the roots getting dried before they were packed in Savannah, or by heating in the cases, but they showed no indications of either, and hence we came to the conclusion that it was an unripened condition of the root and top—a consequence of growing in a section of the country where the needed rest of deciduous plants could not be given, that did the mischief. It is a well-known fact, that in Florida and other extreme Southern States, Hybrid Perpetuals, Mosses, and other deciduous roses are hardly ever seen in perfection, and in some sections dwindle and die; no doubt for the reason that there is never long enough continued low temperature to give them the needed rest that all deciduous plants demand. Asparagus, rhubarb, peaches, apples, pears and cherries refuse to give satisfactory returns when grown in such a climate as Florida, for this reason. In justice to Mr. Oelschig, I would state that the roses in question were not received from his establishment, and possibly the shipment we received last year may not have been a fair sample of Southern-grown roses. I sincerely hope that such is the case, as we are large importers of roses each season, and would much prefer to buy home grown plants at the same price, for the reason that they are grown on their own roots, which is certainly an advantage. I do not think that the trial Mr. Oelschig suggests would be satisfactory or final, or that it is at all necessary; for, if Southern-grown roses are equal to imported stock, the fact will be quickly found out, and they will come to the front at once.

Jersey City Heights, N. J., Nov. 2, 1885.

PROTECTING ROSES IN WINTER.

BY M. L. HIGGINS.

My rose plants are in straight rows, four feet apart, and three feet apart in the rows. Before it is time to cover them for winter (which is usually from the 10th to the 15th of November), and while the plants are free from frost, I bend them down near the ground in the direction of the rows and fasten them there. I then place a row of boards about eighteen inches wide (mine were made of three six inches wide fence boards) on each side of the rows, and nine or ten inches from the plants, thus, | | and let them stand until I wish to close them for winter. I have a lot of leaves gathered and in a dry place, and after the ground has become frozen and winter liable to set in, I put a good body of the dry leaves on the plants, and bring the tops of the side boards together thus, Λ. I then throw some cow manure between the rows, to be worked in in the spring; but before putting on the manure I throw a little dirt on the lower edges of the boards, then close up the ends of the rows with boards or dirt and all will be well. If I fear danger from mice, I put some poisoned meal into an old fruit can, and place it on its side among the plants. My roses are planted where the snow does not blow off, but drifts over them more or less, which of itself is a great protection. In the spring before it is time to remove the covering fully, I open the boards at the top, giving the plants air; but, should a cold spell occur, it is but a few moments' work to close the tops of the boards again, when all is safe. Cared for in this way, I hardly ever lose a plant, and they come out in the spring looking as fresh and green as when put to bed in the fall.

Minneapolis, Minn.

SOME NEW INTRODUCTIONS OF THIS YEAR.

BY N. ROBERTSON.

Geranium Madame Solleri is a new introduction that may be well said to surpass any other of the white-leaved kind in cultivation. This praise it surely deserves, and anyone wanting a plant for ribbon work, or borders for large beds, will find few plants equal to it for such a purpose. Its habit of growth resembles none of the other sorts.

With me it has grown on a high dry soil, one foot through and about ten inches high. Every plant is about the same height, most dense and compact; though the margin of the leaf is not marked by so much white as many of the others, it has shown with me a large quantity of them entirely white, which gives it a most distinct and unique appearance. Besides this, its constitution is much stronger than any of the other varieties, and the manner in which it grows, throwing up all its stems from the bottom, makes it easy of propagation. I can now find plants with as many as thirty or more short stems, nearly all rooted, ready-made cuttings, quite short. The leaf stems are long, but stand quite upright. How it flowers I cannot tell, as none of mine have shown any disposition to do so. I am afraid anyone purchasing it for such a purpose would be disappointed; but as a foliage plant, I feel sure all will be well satisfied.

King Olga is another one that will surely supersede the long favored pink Master Christine. Its show of flowers may not be so great, but it has the advantage of more compact and durable flowers, which last a long time. Master Christine I consider almost worthless as a bedder, from the short time its flowers last when outside, and the ragged-looking appearance it always has in its flowers. It is very well inside, but this one is sure to take its place for both purposes.

Anyone wanting a set of really good double Geraniums, cannot do better than to get P. Henderson's set. For this season they are, without exception, extremely fine, and well worthy of every recommendation that can be bestowed on them. Their varied shades of color are rare and very fine.

And I cannot pass over Zirngiebel's new type of asters; his Pearl White, for pureness of white and compact globular form, surpasses anything I have ever seen in asters, and is really beautiful. His lively rose is also an extremely delicate one in its tints. Hardly so fine in shape as the other, it is, however, greatly to be admired. I have a bed of them this season, but expecting that they would both grow the same height, I filled the centre with the rose; but now find that the white grows considerably the highest. If I had been fortunate enough to have planted the white in the centre of the bed, it would have been still more effective. As it is, those who see it will long remember it. Asters when used in a bed should be planted closely, so as to cover the soil and thereby retain moisture as long as possible. Those two are fine bushy upright growers, with a great show of flower.

I certainly must congratulate the introducers of this truly new fine strain of asters, which must supersede all others, and I hope they will soon be able to give us all the varied colors found amongst asters.

I obtained my seeds from R. & I. Farquhar, Boston. Parties are often afraid to purchase new introductions, as so many inferior things are put on the market with high recommendations, but often worthless; but I am sure that none will be disappointed with those things I have mentioned.

Sup't Gov't Grounds, Canada.

EDITORIAL NOTES.

THE STEPHANOTIS AS A CUT FLOWER.—This is the choicest of all for cut flower work in early spring, and large houses entirely devoted to it are common. Hawkins & Bennett, of Twickenham, have one house 100x10 feet given up to it. It is trained under the roof like grape vines.

YELLOW HYBRID PERPETUAL ROSE.—Great efforts have been made by Rosarians to get a yellow hybrid perpetual, but without success. Gloire Lyonaise was advertised as such, but is said to be but a poor yellow, and with too much of Madam Falcot, one of its parents, to permit it to be classed as a pure hybrid perpetual.

ILEX CORNUTA.—The beautiful Chinese Holly has been in America for a quarter of a century, but we seldom see it. It is from Northern China, and is said to stand the winter perfectly in the north of Germany.

SYRINGA JAPONICA—is an arborescent species, and indicates a good addition to the larger class of our hardy kinds.

SYRINGA LIGUSTRINA.—This is another strongly arborescent species, of which we have seen flowers for the first time this year. It has the virgate habit of Forsythea suspensa, and the leaves also have some resemblance to the entire leaved condition of that plant. The flowers are sweet, like large bunches of privet flowers.

A NEW SPRUCE, PICEA BREWERIANA.—Mr. Sereno Watson thus describes a new Californian Conifer: Branches slender, often elongated and pendant, puberulent; leaves 5 to 12 lines long, ½ to nearly 1 line wide, strictly sessile upon the slender base, obtuse, smooth and rounded or slightly carinate above, stomatose beneath on each side of the slightly prominent mid-nerve; cones 3 inches long, narrowly cylindrical, attenuate at base; bracts linear-oblong (2 inches long), a

fourth of the length of the puberulent scale, which is obovate, with the rounded thickish summit entire; seed 1½ lines long, the wing 4 lines long by 2½ broad. This unusually distinct species has been found (by Thomas Howell, in June, 1884), only at high elevations in the Siskiyow Mountains, California and on the head waters of the Illinois river, in rather dry rocky ground. It grows to a height of from 100 to 150 feet, and a diameter of 1 to 3 feet. Bark reddish. The specific name is given in compliment to Professor W. H. Brewer, who in connection with the California State Geological Survey had so much to do with the botany of the State, both in the field, and in the after disposal of the collections of the Survey. As he took special interest in the trees of the coast, and collected a large amount of material for their study, it is fitting thus to connect his name with the forest trees of California.—*Proc. of the Amer. Acad., 1884, p. 378.*

CEDRELA SINENSIS—is the only member of a genus of large trees which is hardy in this country. Jamaica or West Indian Cedar is furnished by C. odorata, which is cultivated in stoves or greenhouses in this country; and the timber of C. Toona, largely used in Australia and India for furniture and general ornamental work, is also grown in England under similar conditions. At Kew, however, C. sinensis seems as hardy as the Ailantus glandulosus, which it much resembles in general aspect. It was introduced from China to the Jardin des Plantes, at Paris, rather more than a score of years ago, and for a long time was known in nurseries under the name of Ailantus flavescens. It, however, does not possess the strongly disagreeable odor of the foliage of the Ailantus, and the whole plant has a yellower hue. The roots, too, are red and not white, as in the Ailantus. Like that, it is readily propagated by means of root cuttings, and, in rapidity of growth and general adaptability for decorative purposes it seems likely to rival the Ailantus.—*Garden.*

THE FASTIGIATE BIRCH (Betula alba var. fastigiata)—should find a place in every park and in every collection of ornamental deciduous trees. It is the exact counterpart among the birches of the Cypress oak among the oaks. In addition to the peculiarity of its columnar habit of growth, it has the merit of retaining its dark green foliage much longer than any other variety of our native birch, and indeed longer than perhaps any other cultivated species. I am at present ignorant of the history or origin of this interesting tree; it is in all probability a somewhat recent sport; at any rate, it was unknown to Loudon.—*Garden.*

SCRAPS AND QUERIES.

DISBRANCHING OF NORWAY SPRUCE IN WINTER.—A correspondent says: "I asked Prof. Charles S. Sargent how he explained the trimming of the Norway spruce, about which I have previously written, and he thinks the ends of the twigs are so brittle in very cold weather, that a high wind may have broken them off. Each man has some new theory. I will look after the matter, as I can, the coming winter."

[We feel, as before stated, that though we have had to admit that squirrels do cut off some branchlets, all the facts show the impossibility of their being responsible for all. And we incline to the opinion that this suggestion is a very reasonable one.—Ed. G. M.]

CROCKING OR DRAINING POTS.—"J. B.," Fredericton, N. B., writes: "I think Mr. Henderson has no greater admirer of his business tact and capabilities, than I in my humble way; but I was both amused and surprised to find in unpacking a box of plants, &c., from his establishment, the Bennett roses and American Beauty in 3-inch pots, crocked in English style, with one larger one and a lot of small ones at top. Perhaps, after all, Mr. H. has adopted the John Bull fashion in any little rarities."

[In a personal note our correspondent leaves it "to the Editor's judgment not to publish this paragraph, if thought to be of too personal a nature, or in any way be deemed offensive to Mr. H., for whom he has the highest regard."

We think we can answer for Mr. Henderson, that he is not one to desire to suppress any one's inquiries—that he is only too happy to have inquiries, and to answer them.

And in a general way we might add that it is no proof, that because there is a "crock" in a small pot, that the proprietor would advocate it. In all large establishments it is the interest of the proprietor to lead men to think for themselves, and in some measure to feel responsibility for success. They have then to be allowed, in matters of no great consequence, to practice what the proprietor himself would not do. In the establishments of which the Editor is the head, this is of continual occurrence.

There are numerous losses from allowing men to have their own way; but much less than when men are mere machines, and are expected "to do just what they are told and not to think." We should regard crocking very small pots as a waste of time, but as it would not be any detriment to the plant, might tolerate it, if the foreman in immediate control desired to follow the practice.

Plants in larger pots we should assist by "drainage" in the rapid escape of water through the hole at the bottom of the pot—in small pots, if porous, the moisture easily escapes as a general thing. But Mr. Henderson may prefer to have his own say.—Ed. G. M.]

BLACK FLY ON CHRYSANTHEMUMS.—"M." says: Persian insect powder dusted on the plants will kill the black bug or aphis that so often infests chrysanthemums."

DOUBLE STOCKS.—"Mrs. Theodosia B. S.," San Buena Ventura, Cal., asks: "Will you kindly inform me through the columns of the GARDENERS' MONTHLY, why pot-grown seeds of Stocks are superior to those grown in the open ground? Stocks grow to the greatest perfection here (where we never have frost) and seed well. I raise several varieties of the seeds, in different colors. I have difficulty in disposing of them to florists, as they all wish pot-grown seeds. As the flowers of double stocks are barren, so they cannot be used in hybridizing. I cannot see why pot-grown seeds are superior to open ground seed.

"Henderson says in his 'Hand-book of Plants:' All that is necessary to have plenty of double flowers in stocks is, to have seed from strong vigorous single plants. I have found from experience that he is correct, nothing could be finer than our stocks from open ground seed. Yet it seems impossible to convince florists east of this.

"I will be greatly obliged if you will give me the desired information."

[To answer our correspondent's questions clearly, we shall have to go over some scattered ground. It will require close attention; but the reader will be repaid by a full knowledge of the whole subject.

First, we must remember that plants do not flower at all until there has been some check to the vegetative force. If the tree grows very vigorously, we have to root prune it, or in some other way injure or check the growing force. We put this in another form of expression, and we say—the intensity of the reproductive or seed-bearing force is inversely with the plant's hold on life.

Secondly, we may remember, that a flower is made up of metamorphosed leaves. The calyx is an organ, but little removed from a leaf; the corolla is formed from leaves still further advanced. Stamens are leaves, and pistils the organs more particularly related to reproduction, are leaves quite distantly removed.

Thirdly, a double flower is one that has not advanced towards the reproductive stage further than to form petals, with perhaps a few stamens, and makes no seed.

We see from all, that a double flower is the product of a plant, or a portion of a plant, that has had its vegetative powers but slightly checked. This has been actually tested by experiment, by the present writer, and an account formed one of his earliest scientific papers, now getting on to near a half century ago. A large number of plants of the six-week stocks were taken, and a few seed vessels from the first flowers, when the plant had barely passed its vegetative state, were taken; and separately were taken seed from the last flowers on the secondary branches, and when the plant was about to die. The result was the production of nearly all double flowers in the first lot, and single flowers in the second.

We now sum up all in the following conclusion: High vegetative vigor is unfavorable to the production of single flowers.

Carrying this to the direct question of our correspondent, it will not matter so much whether plants are pot-grown or not, except in so far as this may aid or assist vegetative vigor. In some parts of the world first-class pot-culture would aid vegetative vigor, and then a good portion of double flowers would certainly result. And it is no doubt from this experience that florists have learned to look on pot culture as the necessary means to a good strain of double flowers. Plants left to out-door chances, would be much more likely to have vegetative vigor impaired, and produce strains of single flowers.

But anyone can see that it is possible to feed well, and get a plant to live vigorously in the open ground; and, on the other hand, to border on starvation in a pot under glass; and if this were the rule, the great run would be against, and not in favor of, pot-grown plants.

No doubt, if this lady perseveres, she will be able to show that her out-door seed is just as good for double flowers as that raised under glass.

We have gone into the subject at some length here, because it concerns not only the production of double stocks, but also because the answer to her questions affects the whole range of practical horticulture.

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

What are known as Dutch bulbs, need no recommendation from us as being plants particularly adapted to window culture. These are Hyacinths, Tulips, and Crocuses chiefly. But the class of Cape bulbs are no less desirable, though seldom seen. The Amaryllis especially, is a good window plant, and there are now so many species and varieties, that some may be had in flower all the winter through.

A few years ago a good lady, fond of plants, and a good gardener besides, called the writer into her very successful little greenhouse, and somewhat in this wise did she lecture him: "I don't know that you have so written it, but all the books I get hold of tell me never to keep saucers of water standing under the pots—now what do you think of these plants?" They certainly were charming specimens of robust health, rivaling the lady herself in this respect—and the writer received a smiling acknowledgment of the compliment offered. "Now, you see, I keep a saucer under each pot, and I always have water in the saucer. In the winter when I want the plants to look fresh and green, I put a little guano, or some other rich food, in the saucers, and sometimes I put water quite hot. And yet you—pardon me—your writing class positively condemn the practice." And when we come to think of it, why should we condemn saucers under pot plants, and water in the saucers? As the lady says, authors do condemn the practice, but, after all, why? A plant with all its roots in water will not thrive unless it is an aquatic plant. Hence water must run rapidly away from the upper portion of the roots. What is called the drainage is to accomplish this, and so long as the water runs rapidly through the earth into the saucer, it is all good culture requires.

Plant growers have much trouble from insects, the little diminutive red spider especially, the work of which is often not known until the injury is done. It can readily be detected by a small pocket lens, which every plant grower ought to have. For a few plants in a window an occasional sponging of the leaves with water in which a little tobacco has been decocted is about the best thing. In a plant cabinet, tobacco dust—snuff—scattered over damp leaves, is very good, but it does not reach the under surface of leaves. Water heated to 130° is very effectual, and an occasional syringing at this temperature will keep down all insects, and is much preferable to the filthy smoke and horrible compounds so often recommended.

COMMUNICATIONS.

CARNATION, PRES. DEGRAW.—ITS FAULT,—THE REMEDY.

BY ERNEST WALKER.

It is well-known that the tendency of the Pres. Degraw carnation to split the calyx in opening—thus spoiling the form of the flower—greatly detracts from its value for winter forcing. For some time we have been inquisitive as to the nature of the trouble, and whether or not any peculiar treatment would remedy the evil.

Last winter we had among other carnations, planted on the benches in the greenhouses, several hundred Pres. Degraw. While the buds were forming, and until they commenced opening, the soil on the bench had been kept properly moist, and the plants urged to the production of as many buds as possible. They budded and bloomed bountifully, but the flowers, as usual, manifested their old fault—splitting the calyx as they opened; evidently resulting from the thinness of the calyx and its crispness, for which reason they are unable to withstand the pressure of the crowded corolla as it expands. At this stage—for the purpose of reducing vegetative vigor, and to toughen the calyx—we kept the soil in which about half of them grew, dry; and withheld water from the roots as long as possible, though the tops were frequently syringed. The other plants were treated as usual. Then we awaited the result of the experiment, which was: The flowers on those plants which had been watered as usual while opening, kept bursting the calyx. Those growing on the plants in the soil that had been kept dry as the flowers bloomed out, were symmetrical, and their form no longer marred by the ruptured calyx.

New Albany, Ind., Oct. 12th, 1885.

[We may add to this excellent communication, that, in our opinion, it is a general fault with carnation growers, to give more water in winter than is good for them.—Ed. G. M.]

CHOROZEMA CORDATA.

BY CHARLES E. PARNELL.

The heart-shaped leaved Chorozema, C. cordata, is a very pretty dwarf evergreen greenhouse plant, belonging to the natural order Fabaceæ. It is a plant of rapid growth, having numerous erect stems and slender spreading woody branches, and sessile cordate spinose leaves, and the deep red and yellow spotted (at base) are produced in terminal and axillary panicles, which are generally destitute of leaves. When well grown the leading shoots of this plant produce from ten to fifteen individual flowers on the terminal, and a lesser number on the axillary spikes. Its flowering season is from January to March. It is a plant of rapid growth, the leading shoots increasing at the rate of two feet every season, and the plants bloom when only six inches in height, and when well grown the plants attain a height of from five to six feet, if given plenty of pot room.

This Chorozema is a plant easily cultivated, doing best in a compost of two thirds well-rotted sods and one-third well-decayed manure, with the addition of a little sharp sand. Be careful to drain the pots well, and avoid using too large pots. In winter give, if possible, a light sunny situation, with an average temperature of 50° to 55°. Water should be carefully given during the autumn and early winter months, as the plants are then in a partially dormant state, but during its season of growth and flowering give a liberal supply. During the summer season the plants can be planted out in a deep, well-enriched border where they can be well cared for, water being liberally supplied at all times. They should be taken up and potted early in September; when potted, water thoroughly, and place in any shaded situation for several days, until they have taken hold of the soil. Propagation is effected by cuttings, which should be put in early in February, and when rooted, potted off into small-sized pots, and grown on until the weather becomes settled, when they can be planted outside and given the treatment advised for older plants. In order to propagate this plant, some experience as well as the aid of a greenhouse is necessary, so that it is preferable for amateurs to purchase a plant or so, as they can be cheaply obtained of any of our leading florists. The only insect that I have ever noticed on this Chorozema is the red spider, so that in order to keep this pest in check, it is necessary to syringe them occasionally, and an occasional sponging of the leaves is also very beneficial.

The generic name is derived from "choros" a dance, and "zema" a drink, and the specific in allusion to the shape of the leaves. The Chorozemas were first discovered in Western Australia, by Labillardiere, a botanist attached to an expedition sent out by the French government in search of the lost La Perouse. On one of these excursions into the interior of the country the party suffered severely for the want of water, and at last, when all but perished, they met with springs surrounded by these beautiful plants, that furnished an abundant supply of water. From this fact the plant was named, in allusion to the joyful feelings of the party in meeting with an ample supply of water. *Queens, N. Y.*

THE PREDISPOSING CAUSES OF MILDEW.

BY A. VEITCH.

It seems to be the mission of a large class of fungi to act the part of scavengers in Nature, as they hasten the decomposition of dead and decaying organisms, which otherwise might taint the atmosphere and breed disease. There are others again which do not subsist upon lifeless bodies, but upon those which are alive and in health; and these the cultivator has the most to dread, as they do much harm to his crops, and in some cases utterly destroy them.

Perhaps no relief from their ravages could be gained in knowing whether plants that are perfectly healthy are as liable to be attacked as those with impaired vitality; but, as the subject is an interesting one, and as much diversity of opinion exists thereon, some satisfaction would be afforded in knowing the exact state of the case.

Those who believe that disease, or, at least, a low state of vitality, invariably precedes mildew, support their views by saying that in the case of rose bushes under glass being affected it is because of currents of cold air passing through the house, too much or too little moisture in the soil or in the atmosphere, or sudden and important changes of temperature, which affect the constructive energies of the plants, thus bringing them into a fit condition to be preyed upon; all of which may be true, and no careful cultivator but will guard against all such contingencies. It seems, nevertheless, a one-sided view of a complex subject, and affords no satisfactory solution of

phenomena frequently observed both in in-door and out-door culture.

Last season, and after a rather protracted period of drouth, it rained more or less for several days in succession, when quite a number of rose-bushes under glass showed unmistakable signs of mildew. But in this case the change in the weather was as favorable for the plants as it proved to be for the mildew. And I remember a somewhat similar case that occurred several years ago in a house of young grape-vines, which continued in vigorous growth from spring until August, when they were suddenly attacked by the parasite then known as Oidium Tuckerii, the result of which was, that the foliage which gave promise of performing its work satisfactorily until the close of the season, was wholly destroyed in a day or two. And, also, it must be in the recollection of many how that, some forty years ago, whole fields of potatoes in the very bloom of health were utterly destroyed in a few hours by one of the most destructive parasites of which we have any knowledge, and one which, instead of selecting as its victims plants that were weak and sickly, chose rather those that were strong and in health.

From these and similar examples no evidence can be educed in support of the very popular belief that debility must precede the attacks of fungi. On the contrary, the evidence is strong that when circumstances favor the germination of the spores, they can derive support from congenial plants whether they are in sickness or in health. And I cannot believe that spores alighting upon healthy plants will remain at rest or perish, unless adverse influences have toned them down to a state in which alone they can afford due nourishment. I believe rather that, like seeds of higher grade, these minute bodies require a combination of favoring circumstances for their development and growth, some of which seem to be, special conditions of light, heat and moisture, and when these exist mildew will show itself suddenly and before any material change can take place to weaken the plants upon which it feeds.

New Haven, Conn., Oct. 30, 1885.

EDITORIAL NOTES.

Culture of Tree Mignonette in England.—Those who have not yet had an opportunity of visiting the horticultural establishments in the neighborhood of London, or the great flower shows, such as are held at the Crystal Palace, the Regent's Park, South Kensington, &c., where magnificent specimens of this plant are every year exhibited, can scarcely form a conception of the dimensions it attains in England, under a system of culture which is perfectly well-known and understood there.

It is not uncommon to see mignonette, trained in pyramids or other like shapes, measuring three to six feet in height, and this is none other than the common mignonette, grown in our gardens as an annual, which when left to itself never exceeds a foot or two in height at the most.

The arborescent character of the plant is the result of the mode of culture pursued and treatment it receives, not of any difference in species. It is true that by long-continued culture and assiduous care in the selection of the healthiest and finest seeds, plants are obtained which diverge slightly in point of size and vigor from the ordinary type, but they are not more arborescent than is the latter.

The following will be found the most advantageous method of growing tree mignonette. In April or May, take some pots about five inches across, and in each put three, four, or five seeds, and set the pots on a hot-bed, or on a shelf in the hot-house close to the light. The best compost is good light loam mixed with about a quarter of its volume of well-rotted dung, so as to form a black mould, to which is added a certain proportion of wood charcoal, and, if procurable, a little builder's rubbish or broken plaster. The whole should be well mixed and allowed to settle so as to drain thoroughly. As soon as the plants are big enough to distinguish which of them is likely to attain the largest size, the latter is retained, and the rest pulled up. As the roots grow and touch the sides of the pot, the plant is shifted from time to time into larger-sized pots. Care should be taken to tie out the plants as they grow, and to pinch out all blooms as soon as they show themselves. The equilibrium of growth should be carefully watched, and any branches showing a disposition to outgrow their neighbors should be stopped by pinching.

As the season advances and the sun gets more powerful, the plants are put in a more shady place, with a good moist temperature, as in a deep frame or a glass-house with a northerly aspect. If they were left in a dry atmosphere exposed to the sun, the wood would set, the growth would be checked, and the plant would blossom at once. Care should be taken that the growth does not receive a check. In August or September the plants are allowed to flower, if intended for autumnal or winter shows. If very large specimens are desired, the largest and finest plants should be pricked out singly, when about thirty inches high, in large-sized pots in the compost above described. Cow-dung should be mixed with the latter, unless it be given mixed with water, at successional waterings, which is a better plan. The best method of all is to set out the plants as standards in a border in a greenhouse, in a compost of the same kind as that used in pots. The plants should only be allowed to bear a few flowers during the first winter, attention being paid chiefly to putting them into shape by pinching and tying out. To form tall standards, a single stem only should be left and all shoots stopped at the third leaf. The fourth or fifth uppermost shoots, choosing those which are closest together, are kept on to form the head. They are pinched out to make them ramify, and the shoots are tied out to a frame of iron wire or wicker-work. When the plants are raised in pots, shifting should be discontinued as soon as flowering commences. —*M. Oscar Cus, Diplomate of the School of Horticulture at Gendbrugge, Belgium.*

The Red Spider.—According to the *Country Gentleman*, at the meeting of the Society of American Florists, "C. L. Allen, who has had much successful experience in the cultivation of ornamental plants, said that the red spider is a small and beautiful insect, and as it is customary with many to abuse and misuse the weak, this insect has come in for its full share. Like other spiders, this is carnivorous, and never ate a plant in its life, and he regarded it as a friend and not a foe. A healthy condition of plants from care in watering, repels the minute destroyers the red spider feeds on, and thus drives it away."

Surely Mr. Allen has been mis-reported. The cheese mite is "like other spiders" in being one of the web-weavers or arachnideæ, but surely it eats cheese and is not carnivorous.

Seedling Ferns.—If you want Ferns to luxuriate, and seedlings to spring up by hundreds, you must keep the water-pot in use winter and summer; the very life of Ferns is water, as anyone may prove by the luxuriance of our hardy native Ferns, as well as the great variety that are naturalized in localities where the moisture is excessive, and their almost total absence in dry, arid districts. Look at the healthy, luxuriant specimens that one finds hanging to the bricks or stones at the top of wells, where they are daily drenched with water winter and summer, and compare them with the same varieties under a glass roof where the water-pot and hose are put by for months during winter. I know many very successful amateur Fern cultivators who keep their plants in robust health with but very limited accommodation, for, unlike flowering plants, they do not require strong light, but do best in the shade; and as to soil, they will grow in nearly any kind if the drainage is good, and when this is perfect they can hardly be overdone with water. To anyone anxious to try the raising of seedling Ferns who may not have a glass-house of their own, I would advise the half-filling of a shallow box with rough, porous material with a little fine soil worked amongst it, and on this lay any old Fern fronds that have the seed-spores visible on the backs of them. Keep constantly moist by means of a very fine-rosed water-pot or syringe, and cover with a large sheet of glass to prevent evaporation, set in any warm position, and await the result; if successful, the surface-soil will soon be covered with green scale-like growths, and then the various forms of leaves will spring up; let them make two or three good leaves, and then carefully lift with all the roots that can be got, and pot in 3-inch pots in light, sandy soil. A mixture of turf that is partly decayed, peat, and sand, will grow any of the ordinary kind of Ferns to perfection.—*Gardening Illustrated.*

SCRAPS AND QUERIES.

Palms for a Small Conservatory.—"Mrs. J. G. M," Buffalo, N. Y., says: "I write to ask if you, or some correspondent of the Gardeners' Monthly, can tell me what is the reason my lilacs do not grow. I have two, one purple and one white, in different parts of the grounds. All other shrubs, such as syringas, deutzias, Forsythias, etc., do well, but the lilacs do not. If they need any particular kind of food or care I should be glad to know it. This is the second summer. Also, I would like to have some names of palms and ferns, not too expensive, that will do well in the house. I have a small conservatory, 9x5, and want some ferns to stand low and fill up the centre where there are no benches. I find it difficult to keep this cool enough, and do not know either ferns or palms well enough to choose such as will endure what they must. The palms, growing tall, would get more heat than the benches. Also, what can I do with my chrysanthemums this winter? They have been in pots all summer, and when they are done blooming our ground, I fear, will be frozen. Can I keep them in pots?

My cellar has furnace pipes all through it, and I fear it is too hot. Would an attic do for storage place?

[We leave the list of many palms adapted to house culture to some of our correspondents, as requested; but as the chrysanthemums must be attended to at once, take occasion to say that they will not do much in a cellar where there is warmth much above freezing. They grow under low temperature, and rest is desirable. A moderate degree of frost will not hurt them, and it would be better to place them in a place where there was just enough of frost to arrest growth, than above. A barn or cold cellar would be better than a warm cellar, and in the absence of these a sheltered corner in the open ground, with some protection to keep off extremes of cold.—Ed. G. M.]

SPINELESS CACTUSES.—"Amateur" writes: "I notice in the September number of the GARDENERS' MONTHLY Mr. Blanc's interesting paper on Cactuses. In speaking of the Astrophytum he says he believes it to be the only cactus without spines. I expect this was rather a slip of the pen on the part of Mr. Blanc, because in so large a collection as his he can scarcely fail to have some of the Epiphyllum truncatums which are without spines. Likewise, the common Rhipsalis salicornioides, Pelecyphora aselliformis, at least has no visible spines, if it has any at all. Among my own small collection I have an Echinocactus Williamsii, which is entirely devoid of this usual characteristic—looking not unlike an unripe tomato.

SOFT SOAP.—A Pittsburgh (Pa.) correspondent asks: "Where can I procure soft soap for greenhouse use in Philadelphia or elsewhere? I cannot get it in Pittsburgh fit to use; nothing but rubbish. Or is there a good recipe for a home-made article?

[There are so many firms in Philadelphia who supply this that we could not name one more than another without being invidious. An application to any one dealing in florists' supplies ought to bring the article.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Very little can be done now in this department, except by way of preparation for another year.

Manure can be placed on the ground wherever required, and asparagus beds, if not already done, should have a slight covering of it. Bean poles, pea-brush, and stakes of all kinds should be got now, the tool house gone over and put in order, and everything kept in good order and studiously in its place. When the season of operation commences, there will then be nothing to hold back the attention.

If there is abundance of leaves or manure at command, and small frames, beds may be put up for early spring salads, at the end of the month. Radishes and lettuces are, however, very impatient of too much heat; they will come on well if the temperature be kept at 45°. When it goes above that, the sashes should be lifted entirely off. The same remarks apply to the potato and Early Horn carrot.

For those who have time to do it, nothing pays better than an annual washing of the stems of fruit trees. It helps to keep the tree clear of dead bark, and that is an advantage in itself, and then it keeps away the shelter for insect eggs, and the spores of injurious funguses. The old-fashioned lime-wash with sulphur, and some soot or clay to keep down the glare of the lime, is very good, but if even this covering be objected to, there is soft soap, potash, or any of the numerous articles which have been found to be not injurious to the tree itself. The mere wash is a benefit. Surface manuring is also a benefit, and even here the exact material is not such a very momentous question. The leafy vegetable matter, with the sand of roadside clearings, has been found to be very beneficial. We have rarely seen a tree suffer from too rich feeding when that food was applied to the surface.

The pruning of fruit trees should have prompt attention. Apple or pear seldom need more than a thinning out of the weaker branches, except when the growth is weak from insect attacks, over-bearing, or poverty, or bad management. Shortening in, so as to get a new, vigorous growth, will then be a benefit. Just how much pruning should be done, cannot be told outside of the orchard to be pruned. In the old times, we had pictures and written sketches of just how to prune a tree, which no one could follow, because no two orchards will bear just the same treatment. The grape can be brought nearer a general rule—but, even here, little more can be said than that we do not want to retain weak shoots, and we do want the strong ones—we do not want the whole length of the cane which we preserve, but we shorten in proportion to its strength; we want always to keep our annual shoot as near the ground, or as near the main stem, as possible, and, therefore, in pruning, we study to so cut as to give the lowest ones all the encouragement we consistently can, keeping in view our desire to get a full crop of fruit the coming season.

COMMUNICATIONS.

A PLEA FOR THE HOE.

BY RUSTICUS.

Of late there seems to have arisen a prejudice against the hoe. I belong to the opposite party. I know too well the advantages of a thorough use of the hoe, to hold it in light esteem. Certain agriculturists, who claim to be good farmers, I doubt not, have announced themselves as above using it. I think they do not "know it all," yet. The hoe gets where larger implements can not. With an intelligent man behind it, it does very effective work. I begin with it early in spring, and keep at it until frost, and think I make it pay.

Let me give a little of my experience. Last spring I planted some Everitt's yellow dent corn among my new strawberry plantation, for shade, and to use it as a winter protection. I purposely planted it for hoe cultivation. Throughout the season I plied my hoes faithfully. The corn grew fourteen feet high, and bore twelve-inch ears; hard to beat with a plow, Mr. Editor. In my gardens I cultivate more with the hoe than with the plow and cultivator, and raise fine vegetables. I hoed nearly all of my corn land. My Defiance corn yields 126 bushels per acre—estimated, that is. I waged war upon the weeds in that giant corn, hoeing portions of it several times. The corn is turning out remarkably well. I have never seen it surpassed. Do not abandon the hoe. This corn is admired by all who see it. I cut 20 hills square of it, 1½ shocks, and shucked out 12½ bushels, corn measure—62 ears made a bushel. Ordinarily it takes 100 to 120. I tested ten varieties of improved field corn this year, using the hoe on nearly all of it, believing as I do, that it adds to the yield. It is generally thought so. My corn is very fine, and much of it due, I hold, to the hoeing.

Perhaps the Germans use the hoe more indefatigably than any one, and see what gardeners they are. I sometimes say they can make a fortune where another man would starve. There is, perhaps, no other farm implement that can be made to pulverize so well as the hoe. A loose, disintegrated surface soil is one of the cardinal points of good husbandry. There comes a time when the gardens will not admit of the cultivator and plow, from the spreading vegetation. But the hoe can always be worked. When I dispense with the former, I find abundant use for the hoe; indeed, would not consider I was gardening, were I not to bring it into service. The continuous loosening of the soil, especially after beating rains, is of prime importance. This the hoe can do throughout the season. After corn has been laid by, weeds will appear, which should be destroyed with the hoe. The most skilful cultivation does not eradicate all the weeds in the hills of corn. This the hoe can do, and should be made to do. A vigorous use of the hoe this year has given me, or at any rate, materially helped, corn fourteen inches in length, and weighing over a pound and a half; stalks fourteen feet high, blades over six inches across. I say of the hoe, "multum in parvo." An admirable improved hoe, is the hand cultivator. I regard it as a decided advance. It will do the work of six to ten men, and as effectually as the hoe. I find it invaluable.

Lexington, Ky.

EDITORIAL NOTES.

BARK INSECTS ON FRUIT TREES.—The *London Garden* says: "For destroying Moss or Lichen on fruit trees, there is nothing better than lime thinned to the consistency of whitewash, and strained through a fine sieve or thin canvas to exclude all rough sediment. It will then be ready for applying to the trees either by means of a syringe or garden engine. For the destruction of scale and American blight I have tried many insecticides, but have found nothing better nor so cheap as soft soap and paraffin oil prepared in the following manner: to make four gallons of the mixture, take half a pound of soap and half a pint of paraffin; place them in a bucket or

other suitable vessel, and add two to three quarts of boiling water; stir the mixture until the soap is dissolved, and then add the remainder of the water. This mixture may be applied by means or a syringe in the following manner: Draw up a syringeful and discharge it into the bucket, and when the mixture is agitated draw up another and apply it to the tree. As American blight winters in the soil underneath the trees, it would be advisable to have the soil removed from under affected trees to a safe distance and burned, so as to entirely eradicate the insect."

GRAFTING AND BUDDING. — Mr. Spaulding stated at the late meeting of American Nurserymen, that for applying the wax in grafting, he used fine cotton yarn soaked in hot wax. The yarn is run on a big spool, and then thrown into the hot wax and left until saturated. For budding young trees in the nursery rows, and in order to work low down, he has the earth removed from the stocks immediately forward of the budders, when the bark lifts easily; but if the earth is removed some hours before, the bark ceases to lift freely. If the buds have been timely inserted, the thickening of the sap by exposure causes them to adhere better to the stock.

RUSSIAN APPLES.—At the recent meeting of the American Pomological Society, Prof. Budd stated that the success anticipated from the introduction of Russian apples had not been wholly realized, and the attempts to improve the ordinary race by crossing with the Siberian race were equally unsatisfactory.

THE LAWSON PEAR.—In some quarters where a terrible racket was heard because we decided that under the rules, Lawson would have to be adopted as the name of this pear, we are now told "it matters little what name is finally given to this Pear." This conclusion is at least a hopeful sign of final recovery.

GOOD USE FOR BAD SPARROWS.—Mrs. Mary H. Ramsey tells those who mourn over bad sparrows, through the Montgomery County, Ohio Horticultural Society, that they should do as the English do. Let us have sparrow pie for dinner, and broiled sparrow for tea, and sparrow served for the sick. They are easily caught by placing a few twigs dipped in bird lime about their feeding places. We might thus, at least, hold them in check.

OLIVE CULTURE.—It is sometimes said that Cotton seed oil is so often sold for Olive oil, and is indeed as fully equal to Olive oil in the uses for which Olive oil is used, that it does not pay to grow the genuine article. But we understand there is a grove at Cannon Point, Georgia, planted a hundred years ago by the then United States Minister to Spain, that last year yielded 200 gallons of oil, selling at prices ranging from $2.50 to $10 a gallon, and is considered very profitable.

PEAR BLIGHT.—The point we made recently, that scientific men who are aiding us by their researches in discovering the causes of plant diseases, do not render us the service they might, because of confusion in identifying what cultivators refer to. What they call "pear blight," for instance, is not in many cases, the terrible foe, "fire blight;" and hence when they tell us that they have experimented and found that "bacteria" is the cause, we are left in uncertainty as to whether they mean just what we do.

This is again impressed on our attention by the essay of Prof. Arthur before the American Pomological Society, as reported in the *Country Gentleman*. It is very evident that the diseases or disease he has been grappling with, and which has been reproduced by inoculation, is not the "fire blight," as many of us understand it; and this leaves the question of the origin of the "fire blight" still an open one.

In a letter to the *Country Gentleman*, Mr. Charles Betts, of St. Joseph's County, Michigan, confirms this conjecture, that the "Pear Blight," on which Prof. Arthur has made such careful experiments, is not the old "fire blight" which is the great worry of the Pear grower.

QUALIFICATIONS OF GOOD CELERY.—We have in the fruit catalogues, the distinction of good for market, or good for amateurs. We should have some such distinction among vegetables. In celery, for instance, there ought to be a distinction between a kind good for the kitchen, and a kind good for the table. For the former, where it may be required for stewing, chicken salad, soups and similar purposes, the actual pound weight for the price is all that need be considered. But for the table one does not desire four or five large and thick leaf stalks, but a dozen or more of them of moderate size; and for this purpose a variety that produces a large number of leaves on a plant, would be much preferred to one that had but a few, no matter how white or solid these few may be.

Again, flavor, though not often considered, is of great importance in reference to this division. For the mere kitchen purposes, that with a somewhat pungent taste is more desirable. It enters better into combinations, especially for some soups. But for table mildness is essential, and the character which the epicure knows as a nutty flavor is a first essential.

STRAWBERRY GROWING IN ENGLAND.—Strawberry growing by the hundred acres was surely an American invention, but our English cousins are fast following in our wake. *Gardening Illustrated* says that H. E. Vinson & Co., of Swanley in Kent, have 500 acres, which yielded about 1,000 tons last year. They employ about 1,000 hands in the marketing season, 300 being pickers. These live in tents, scattered over the fruit farm. The worst fruit is not sent to market, but is made into jam on the spot.

DISEASE OF THE PEACH IN NEW ZEALAND.—A serious trouble has become prevalent among peach trees in New Zealand. It is akin to our "curl." The leaves fall soon after flowering, and minute orange blotches appear on the twigs. Usually the branches die; but sometimes a second growth appears in the summer. But the weakened trees usually die wholly the next year.

CHERRIES UNDER GLASS.—Notwithstanding the English climate is peculiarly a cherry one, and "cherry-ripe," in season, one of the most familiar of London cries, the wealthy classes with whom excellence is more of a consideration than the mere price per lb., grow them in glass-houses, and get fruit of near double the size, and of greatly increased beauty and flavor. Lately attempts to grow them in pots and tubs under glass, instead of in the open ground under glass, have been so successful that it is believed the pot plan will become general.

GLADNEY APPLE.—We do not need large apples for the dessert table. Small ones are far preferable. The Lady apple is popular chiefly because it is small and pretty. It is not remarkable for superior flavor. We have often wondered why Gladney was not taken up for this purpose. About the same size, just as pretty, keeps well through the winter; and yet far more sprightly and agreeable to most tastes.

AMERICAN GRAPE VINES IN FRANCE.—As evidence of the interest taken in this plant, it may be noted that there is a monthly magazine there, bearing the title of "Vigne Americaine."

The American roots are grafted in immense quantities, to which our apple-root grafting is scarcely a comparison. Whole families are employed in this lucrative work. It is given out by contract to household families, who do the work very cheaply. A woman, besides looking after her children and household affairs, will graft 300 plants a day.

AMERICAN GRAPE CULTURE.—There is something phenomenal in the improvement of the American wild grapes. Possibly nothing like it has occurred in the history of fruit culture anywhere. In 1858 Mr. P. Barry said at the January meeting of the Western New York fruit growers' Association: "Although there are now many varieties claiming attention, and have so far promised to become valuable acquisitions, yet the Isabella is the only one of established reputation which I would be willing to plant extensively in Western New York."

To-day we have scores adapted to that location, and as for Isabella, it would not be easy to bud plants, except as curiosities, anywhere.

IS THE FIRE BLIGHT AN ENEMY OR FRIEND OF THE PEAR GROWER.—Mr. Hovey makes a good point in the *Rural New Yorker*, that when people talk of abandoning pear culture on account of the fire blight, we have only to look at the abundance of fruit everywhere, and the low figures they often bring.

Potatoes are just as cheap and as abundant as ever they were before rot attacked them, or the beetle ate them up. As Mr. Hovey's paper suggests, these troubles seem to be sent in order to frighten the faint-hearted out of the field so that the more persevering shall have a greater reward.

IMPROVED SAUR KRAUT.—To many there can be nothing possible that could improve a dish of saur kraut; but an exchange asserts it is possible, and declares that it may be in this way:

"Six pounds of saur kraut, boiled till tender in water, with a half pound of butter (an earthenware or a porcelain lined pot, closely covered, is the best for this purpose). When it has boiled quite tender, the kraut should be put in a sieve or strainer to thoroughly drain. Meanwhile put into a saucepan a quarter of a pound of butter, a tablespoonful of flour, and a pint of sour cream. When this boils, it is to be poured over the kraut and well shaken together. The oysters are to be stewed slowly, with only the addition of a little pepper, in their own juice. About twenty-five oysters should be allowed to each pound of kraut. It is then to be arranged in the dish, a layer of saur kraut and a layer of oysters, alternately, and their juice poured over all, and served very hot."

SCRAPS AND QUERIES.

THE BACTERIAN THEORY OF PEAR BLIGHT.—William C. Medcalf, 98 Avenue D, North St. Paul street, Rochester, N. Y., writes: "The papers on the above subject, which have appeared in the GARDENERS' MONTHLY, do not as clearly point out the originator of this theory as they do the apparent plausibility of its soundness. It would, however, seem to rest with one of two individuals, or with both, viz.: William Creed, of this locality, and Professor J. T. Burrell, of Illinois. If you could enlighten us on the above query you would undoubtedly confer a favor upon the inquisitive in search of facts, as well as clear up a doubt to the satisfaction of those giving attention to the study of the disease, as based upon this most recent hypothesis. Perhaps both the above gentlemen can give aid as to the time of their respective standpoints of investigation."

[Professor Burrell made the first absolute statement that Bacteria were the cause of the "blight" in the pear, at the meeting of the American Association for the Advancement of Science in Boston; though the statement that it was caused by the development of some minute organism closely allied, if not the same, was made in our columns some years before by Professor J. Gibbons Hunt, of Philadelphia. Dr. Hunt's demonstration, however, seemed to point to some very low ferment fungus than to a bacterium, and it is by no means certain yet that this is not the case. After fermentation is once started, as it would by a wound, one would be quite likely to find bacteria there. For they are omnipresent, feeding on decaying matter and watching for more. We may find them by millions in every one's mouth, and, it is said, in dew drops, as well as in a branch with the pear "blight."—Ed. G. M.]

DISEASE IN RASPBERRIES.—"J." writes: "My neighbor has some very thrifty Blackcap raspberries that, after sending up stout canes five and six feet high, began suddenly to die about four weeks since, and some are now dying. On examination I found no evidence of the work of any insect boring at tip or root or on the leaves, but the cane died throughout its entire length and in one to two weeks' time. Digging up a very large nearly dead plant, I found nestling in the bark at the crown of the root a nest of young millipeds. The bark was rotten and the stem practically girdled. Could these little millipeds, as large as a knitting needle and perhaps one inch or less long, have done the mischief, and if so, what remedy? The Redcaps were not affected, and only here and there one of the Blackcaps.

[Millipeds, or "hundred legs," we do not think, often injure plants to any great extent. They feed on softer things than wood or bark. The description seems like some of the fungus troubles that very often follow the track of the raspberry grower. There is also a raspberry borer that is often destructive.—Ed. G. M.]

RITSON PEAR.—Stone & Wellington, Toronto, Canada, write: "We mail you to-day a sample of a new seedling pear, which we call 'Ritson.' The original tree is over 65 years of age, and still bears large crops of fine fruit. While other varieties have been planted and grown in the same field, and after a few years have yielded to blight or some other cause, this tree has never been affected in any way, either by severe weather or disease of any kind. We believe we have in this pear an iron-clad variety of merit. The fruit, as you will see, is of very good quality, and as the tree is an abundant yearly cropper, and also very hardy, we believe that it will be an acquisition to our list of pear trees. Will you kindly give us your opinion? The original tree stands at Oshawa, Ontario, 33 miles east of this city."

[This is a small pear, about four inches in length, and truly pyriform. Its chief merits, no doubt, lie in the hardiness and other characteristics related to the high Northern latitude, and of which we cannot judge from a single specimen of the fruit. This, on the 10th of October, was in good eating condition, and the expression of our correspondent, "very good," does full justice to its eating qualities.—Ed. G. M.]

APPLE, BENTLEY'S SWEET.—"J. G. R. K.," Lovettsville, Va., writes: "I cannot let the opportunity pass to send you a veteran apple by mail, that I found with several others in a box in the cellar, perfectly sound, where they had been placed last fall (1884). The apples in the box had been used until strawberries and other early fruit came in. They were then let alone, and forgotten (perhaps half bushel).

On looking up boxes to use for apples again, I found the sound apples in the box among the rotten ones, and were filthed over by mice working among the rotten ones for the seed. This is the second time I have found sound specimens of this variety in the bottom of boxes, that had been placed there twelve months previous, and no other variety have I ever found under the same circumstances, and some of the usually considered best keeping varieties have always been stored with them. I send the specimen without washing off, so if you choose to keep it longer, you will have a fair chance to test its keeping qualities.

You may remember a specimen I sent you several years ago (but not so long out of season) of the same variety—Bentley Sweet. For long keeping, it certainly leads, and is a very prolific and early bearer.

[This is a very pretty as well as good apple, and, although some may not want to keep apples over till long after apples come again, the fact is valuable as showing the strength of the claim of this good apple to keeping well.—Ed. G. M.]

YELLOW FOREST APPLE.—Mr. Sanders, Collinsburg, La., says: "I can't tell you the exact difference between the Yellow Forest and the Newtown Pippin, as I have not seen the above, but find that the description in Thomas' "Fruit Culturist" differs somewhat. The Yellow Forest is never irregular, and is never large; it is sometimes remotely conical, has no dull brownish blush, and sometimes has a few bright red specks on it; has a good many black specks, especially when left on the trees late; also greenish, dark blotches toward the crown; stem shows about ¼ inch above the apple when viewed from one side, while the Newtown Pippin is very short as shown by Thomas. Some specimens show a little yellowish russet about the stem.

"The Yellow Forest, as I wrote you before, was found growing in the forest when a small bush and transplanted to Capt. Winston's orchard about six miles from my place. The tree has been bearing about twelve years annually; growth rather slender, but makes a beautiful tree, not drooping but diverging. Old cider drinkers say that it makes the best cider they ever drank. Ripens in September and keeps well. I also have the finest October Cling peach that I have ever seen, it is yellow, large and juicy. Both being tested in N. J."

FORESTRY.

COMMUNICATIONS.

FACTS IN AMERICAN FOREST PLANTING.

BY R. DOUGLAS.

I would respectfully report that the contract of R. Douglas & Sons for planting and cultivating the tree section at Farlington, Kansas, is now completed.

Below is the height of the trees and circumference of the stem near the ground.

	Age.	Height.	Circumference.
Catalpa speciosa	6 yrs.	18 to 21 ft.	12 to 18 in.
" "	5 "	12 to 17 "	10 to 16 "
" "	4 "	8 to 14 "	8 to 12 "
" "	3 "	5 to 10 "	6 to 9 "
Ailanthus glandulosa	6 "	16 to 18 "	10 to 15 "
" "	5 "	12 to 17 "	10 to 13 "
" "	3 "	6 to 10 "	6 to 9 "

The above is the general height, but there are spots of "gumbs" or alkali soil, where, apparently, the surface soil had been removed at some previous time, on which the trees make a stunted growth. Fortunately, there is very little of this in the land we have planted, so that there is not an acre planted by us that will fall short of the number of trees required to fill the contract, and probably not five acres on which there are not from twenty-five to twenty-six hundred. Our contract calls for two thousand to the acre. The forest is in a very healthy and thrifty condition, and in every way very promising for the future.

As forestry in this country is yet in its infancy, and nearly everyone who has given it but a passing thought has a theory of his own, and looks more to present appearances than to ultimate results, and as one or more of these theorists have recommended the pruning of these trees, I would here urgently caution the company so that they will not be led into this great mistake and very expensive experiment.

They were planted closely to avoid the necessity of pruning. The trees will prune each other, even the six-year-old trees are now twenty feet high and have their side branches already smothered and dead up to over one-half their height, so that it would be a great waste of time, if nothing worse, to prune them the first ten feet from the ground; and it must be apparent to any one that it would be very costly to prune them up the next ten feet, but in three more years the next ten feet will be pruned by the same process as the first. The living side branches are a great advantage to the trees, support the trunk, fill up and shade the spaces between the trees, shading out the weeds, and retaining the moisture. The branches already dead, and they are the only ones that could be removed without actual damage to

the trees, would cost as much for pruning and removing as the full cost of furnishing the trees, planting and cultivating them till the present time, viz., one and one-half cents per tree.

These dead branches will fall off gradually, so that when the trees are sixty feet high they will show a trunk of forty feet without a limb, and, as may be seen in the native forest, the branches will have decayed gradually and assisted in furnishing nutriment for the living trees.

These trees are making height so fast that, on measurement, we found leading shoots of this season's growth on three-year-old trees over 6 feet long, and on four-year-old 7 feet long, showing that they need all the living side branches to support the stem.

It is true that, to an ordinary observer looking in among these trees, the dead lower branches will have a ragged appearance, and aside from these there are misshapen and crooked trees, but even these are better left standing than if removed, as they afford shade for the trunks of adjoining trees.

There will always be "cull" trees in the nursery, and such trees, even with the best of pruning, will still be culls.

I would not be understood as offering the foregoing remarks as an apology; very far from it, as the plantation is a surprising success. This plantation is on a larger scale than any other in the country (unless it be the one nearly adjoining, that we have recently planted for Mr. H. H. Hunnewell); and I would urgently recommend that the trees be allowed to stand undisturbed—except to remove the branches that reach out into the forest roads—till the first planting is at least ten or twelve years old; but in the meantime if fence posts be required within that time, they can be thinned out as wanted, without damage to the plantation.

If trees are required for planting at any of the stations of the company's road, or for parks or other purposes, thousands can be taken out of the three-year-old trees, near the section house, without injury to the plantation, and they are of the very best size and condition for that purpose. I would suggest that if they are required for any such purpose, an experienced man should be employed to see to the proper digging and planting, as this would not only be the most successful but the most economical way that the work could be done.

Waukegan, Ill.

[These are extracts from R. Douglas & Sons' Forestry Report to the Kansas City, Fort Scott and Gulf Railroad Company, and are facts worth whole volumes of speculative treatises made up from European experiences. There is one point suggested by Mr. Douglas' report that yet requires exact figures to properly settle, namely, the most profitable distances to set forest trees. It is too wide a subject just here, and we mention it only that our readers may remember that it is something the future will be interested in.—Ed. G. M.]

EDITORIAL NOTES.

COCOANUTS IN NEW JERSEY.—The following is from a Philadelphia paper:

"It will no doubt surprise our readers to learn that successful efforts have been made by English capitalists to domesticate in England certain species of cocoanut palm that is now growing there at all seasons and producing fruit, which, if it be true, we shall have efforts made to domesticate the same tree on the Jersey coast, so that the seaside resorts along that shore may in due time assume a tropical aspect with palm trees growing in the open air."

The original paragraph was of course intended, as the English say, as a "rig" on the ignoramuses who do not know that tropical heat, and a temperature never lower than 45°, is necessary to grow a cocoanut palm of any "species." Our Philadelphia friend had better get out of the hole by asseverating that he was simply playing a game on the Jerseymen. Still, with the dense popular ignorance of the simplest facts in gardening which so thoroughly prevails, the nurserymen and seedsmen will soon, as in the case of the famous Eucalyptus, be run down with orders for cocoanuts of "a certain species" for planting along the coast from New Jersey to Labrador, and they had better provide themselves with something, even though they be Osage Orange balls, for the silly people who will have something or deem you "one-horse concerns, not up to the times," if you have not what they ask for.

PROFITABLE FORESTRY IN AMERICA.—We are sure it will be a surprise to the readers of the GARDENERS' MONTHLY to learn from a European magazine that Thomas Meehan believes that forests cannot be planted to any profit in America. Thomas Meehan has said that it is unlikely forests can be profitably planted on the thick setting and thinning plan, but to his mind this is a totally different question. No one has been more strongly given to urging forestry planting than Thomas Meehan.

But then among the lost arts seems to be the power of correctly stating the argument of an opponent.

SPOTTED LEAF IN PINE TREES.—The spotted leaf, the work of a fungus, Æcidium Pini, is proving seriously injurious to some forests of Scotch pine in France.

AMERICAN WOODS.—The strongest wood in the United States, according to Professor Sargent, is that of the nutmeg hickory of the Arkansas region,

and the weakest the West India birch, Bursera. The most elastic is the tamarack, the white or shellbark hickory standing far below it. The least elastic and the lowest in specific gravity is the wood of the Ficus aurea. The highest specific gravity, upon which in general depends value as fuel, is attained by the bluewood of Texas, Condalia obovata.

THE SO-CALLED HARDY CATALPA.—We always protested against the specific use of this name to the Catalpa speciosa as distinguished from C. bignonioides, because the latter is quite as hardy as most North American forest trees are. C. speciosa might possibly be hardier, but that did not warrant the imputation that C. bignonioides, or the eastern catalpa, was not hardy in any fair acceptation of the term. But it turns out that C. speciosa is no more hardy than the older species. "The Bulletin No. 7 of the Agricultural College of Michigan" says:

"The two catalpas, C. speciosa and C. bignonioides, are about equally hardy. Both suffer considerably, and appear to be unreliable. As Catalpa speciosa has not been recognized as distinct from the older species until quite recently, the leading distinction between the two may be given. C. speciosa—tree tall, a straight grower; leaves softly downy, inodorous; flowers two inches across, nearly white, the lower lobe notched; pods stout and long (one and a half inches in circumference). C. bignonioides—tree lower, diffuse in growth; leaves smooth, or nearly so, giving a disagreeable odor when touched; flowers smaller, dingy, the lower lip entire; pods more slender. Teas' Japan Hybrid Catalpa is not hardy."

And of its climate it says:

"The climate of Lansing appears to be uncommonly severe for this latitude (43° nearly) in Michigan. Last winter the mercury sank 32°, and many times in quick succession it was below minus twenty. That, however, was an unusually rigorous winter. Moreover, the college campus lies in an open and exposed country, and the winter winds are very destructive. It is only the hardiest plants which can endure long."

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

NATIVE FLOWERS OF SOUTH CAROLINA NEAR THE MOUNTAINS OF NORTH CAROLINA.

BY MRS. J. S. R. THOMSON.

I was interested in an article on page 278, September GARDENERS' MONTHLY, comparing the native flowers of Rochester, N. Y., with California, within a given radius, and the desire to have some adequate idea of the number which grow here became strong within me. I am no botanist, alas! but I have a keen eye, and when driving each day I always hie to the woods and water courses, trusting to same keen eyes to discover some new species (new to me, I mean). Dr. Asa Gray, but oftenest the Editor of GARDENERS' MONTHLY, has named for me unknown species; and last said a few weeks since in a note, after having named a native Hydrangea nivea for me, that "if I looked sharp I would most likely find an allied plant, American Climbing Hydrangea, Decumaria barbara," which put me into a fever of eager watchfulness. I took my three books—Peter Henderson's "Hand Book of Plants," Chapman's "Flora of the South," and Dr. Preyre Porcher's "Resources of the Southern States"—and read until I thought I could identify it if I was lucky enough to come across it. For years I had admired a climbing plant with myriads of white flat clustered flowers which clung to the tree whereon it grew with the tenacity of ivy, and always intended removing a small specimen to my own home, thinking it would be a good companion with my Ampelopsis Veichtii which covers hundreds of feet of the brick foundation of my home. At hap-hazard I drove to this specimen and collected many branches, feeling sure as soon as I reached it that I had hit it correctly, for it having flowered in June it was filled with its seed vessels, which, according to descriptions, ought to be urn shaped, and sure enough they are. They remind me of the old fashioned Pot-pourri Pots of our grandmothers with their queer, squeezed-in, little covers. But to make sure I sent specimens to the Editor of GARDENERS' MONTHLY and he replied, "You have found it at last, sure enough." This A. M. I drove out to gloat over this discovery and to study habits of leaf, flower and growth, and afterwards continued my drive a little farther. I suppose I went not over one-fourth of a mile and investigated in a very cursory manner

not over fifty feet of the creek banks, but I, who am so proud of the native flowers of this South land, was astonished myself at the richness of that small area, and will here name what I know, assuring you that I am confident that much of merit was passed over from my lack of knowing them.

First though came my sought-for Decumaria, and on a steep bank jutting over a gurgling streamlet I found enough to stock almost a nursery. In close proximity and entwined with this is a plant which in ignorance I have always called Bittersweet, Celastrus scandens, until I recently saw an illustration of the real variety. This is a shrub with long, narrow, lance-shaped leaves, not over one-half inch wide by three inches long, almost like a vine, slender, delicate growth, flowers small and inconspicuous; but its beauty is in its rough four-celled capsules, which are, when mature, a pale flesh. In September this capsule burst open like a chestnut burr and from it hung four orange colored seeds by a white hair-like thread which makes them jingle against the waxy sides of the capsules like a bell clapper. These are generally solitary and not over abundant, but in fall after leaves fall it is quite an attractive plant. In cultivation with careful pinching in it grows into a thick shrub and well deserves more extended cultivation. I would like well to know its name. [Euonymus Americanus.—Ed.] Not three paces from this was the red twigged Cornus, which I insisted was Sanguinea, but Dr. Gray and Prof. Meehan set me straight again and to-day I am reconciled to its being a different variety; I claimed it had three good points, viz.: hardiness, fragrant white delicate laurestina-like flowers, and its blood-red branches; after denuded of its foliage would make a bright spot on any lawn; added to this I have found that its fruit cymes are very attractive, a peculiar blueish purple size of Holly berries—pendulous. One specimen before me has twenty-five berries perfect in form and color; how long they remain on I am unable to say. But here is a shrub every way worthy a wider culture, beautiful in flower and fruit and without foliage. Glancing around I espied three plants of Clematis Viorna which has solitary pendulous purplish red flowers, same shape and size of C. crispa and coccinea; here it is called "Leather flower" from the great substance of flower; near by the never-to-be-forgotten Gelsemium sempervirens or Carolina Yellow Jasmine, which in spring clothes the banks of our streams with a yellow fragrant glory. These are shaped and size exactly like the flowers of Weigelia rosea, only on a delicate tendril swayed by every passing breeze wafting to our grateful senses a delicious jasmine fragrance. This vine covers acres of low lands, entwines itself on every branch and shrub, and from thence aloft to tops of highest trees. In a boat on the water you can pass under large clusters of it and can cull a boat load of branches from one tree. The water dotted for yards with its shed flowers like golden boats floating around.

My article is now too long, but I long to write of what I saw in my short ramble—Trumpet vine, Menisperum, Columbine or coral honeysuckle, Cocculus Carolinianus, clustered Solomon's seal, another variety with berries in pairs, Clematis Virginiana, a tuberous rooted Columbine, Kalmia, Azaleas two varieties, golden rod, three of Eupatorium purpureum full six feet high, with magnificent plumy branches; Apios tuberosa, wood violets, and ferns, grasses, etc., too numerous to mention. Ah! the sunny South is the place for me. Here God has with bountiful hand spread abroad his beautiful floral treasures. Azaleas that are equal in beauty with the exotic ones, of white, buff, deep rose and pale pink, sometimes a mile in one stretch of them, as far as the eye can reach you see them in boundless profusion intermingled with Rhododendron and Kalmia. Now, how compares our land with the far-famed California? We, too, have lilies; one seldom offered for sale on account of its rareness, that is L. Catesbæi, the smallest bulb of the whole tribe, a deep glowing red purple, spotted with foliage close to the ground like that of the tuberose. These I have in abundance and am trying to collect the largest amateur collection South. I am nothing if not ambitious, and my ambition tends flower-ways—to have something of nearly every species that can be kept in a pit or greenhouse with no fire heat.

Spartanburg, S. C., Sept. 9th, 1885.

VARIATION IN NATURE.

BY R. C. FAY.

Last spring I sent a few notes of observation, on my experiments with corn, to the *Philadelphia Record*, for the purpose of ascertaining the present views regarding that plant; the Agricultural Editor wrote an article, and it was printed in that paper of March 7th. He positively stated that the colors were produced from pollen from corn plants of the various colors. The idea of anything like the possibility of the florets having the power of changing their color, was not to be thought of for a moment. From the remarks made in that article in which your name appeared, I inferred that you were of the same opinion as myself. I thought you might be interested to know that I have experimented for five years with the object of determining the following questions:

1. Is the corn known by different names and colors, distinct varieties? One authority says, Spain alone has 130 distinct varieties.

2. Do the florets change color (wholly or partially) independent of the pollen of the plant?

3. Can full, plump grains be produced from a dent corn?

In taking up an ear of dent corn seven years ago to examine it carefully, it occurred to me that it had been cut before it was perfectly ripe, or that there was something wanting for its perfect development.

Five years ago and since, I have been experimenting to answer these questions, as I believe that all the colors, shapes and sizes of corn have been propagated from one plant, whatever the original color may have been, and with my experiments of last year with white dent, and this year with yellow dent corn, I am almost convinced of my success. Last year I produced two ears with red florets beneath white corn, and the color from the florets permeated the white corn, giving it a pinkish color. I am confident this change was entirely in the florets, for the pollen shed from the tassel which was a large one must have been white. I was also fortunate in preserving an ear of the kind grown which is a perfect match. I also produced full, plump grain. This year I took an ear of yellow dent, treated it in the same manner, and produced florets from white to dark red, the dark red permeating the yellow corn, showing again internal changes; the grain is of all shapes and sizes, and even without dent and others with various degrees of dent. Corn maintains its character, when once established, with great pertinacity, but climate, soil and cultivation will produce in many plants marked changes. I am confident that whatever the color of the corn planted be, the florets have the power of changing under certain conditions, and these conditions, I think I can produce artificially. It is evident that the florets color the corn, and the many partial changes that have been observed (as to the one you raised the question of the innate power of changing) has erroneously been attributed to foreign pollen. Cross fertilization is self evident, and no one questions it, but I believe the male (pollen) does not have his own way all the time, but the female (florets) will assert her rights when little expected.

If you are interested in this subject, I will show you the results of my experiments some time when in Philadelphia. *Jersey City, N. J.*

[Nothing can be more certain than that pollen has not its own way all the time—in other words that not all variation comes from the action of pollen. We might decide this theoretically as the writer does; if all variations spring originally from one parent species, as most of us believe, the first variation must have been wholly independent of crossing between two varieties. There were not two varieties in existence to cross. But the question is practically decided, for it is an every-day experience with introduction of new species, that variations occur independent of crossing.

This is, however, often forgotten, especially when the subject of the immediate influence of pollen on fruits is concerned. Natural or innate variation is lost sight of, and changes, easily accounted for on this principle, referred to pollen influence. That change in corn is often from the influence of pollen can scarcely be denied, but that it often occurs independently of this action is well shown by our correspondent.—Ed. G. M.]

SCRAPS AND QUERIES.

GRAFTING DUTCH BULBS.—A Philadelphia correspondent says: "I am about to plant some bulbs in small pots (Hyacinths, Tulips and Crocus) and wish to find out, without consuming the necessary time to experiment, whether I would have success. Suppose I take two Crocus bulbs, yellow and purple, and cut them in halves and place the cross sections of half of the yellow and half of the purple together, will I succeed in getting the yellow and purple flower seemingly from one bulb? I presume there would be two stocks but that the centres of the bulbs would be so close together that if both would thrive they would seem to be sent forth from the same bulb."

[Not knowing that such an experiment has been tried, we can only give a hypothetical answer. Graft unions only take place in growing vegetation; a bulb finishes its growth the year previous to the proposed experiment. It, therefore, does not seem possible that the two halves of mature bulbs can unite.

Then in regard to the flower buds, or say spike, as in the Hyacinth. These buds are formed the fall before, and we may see the little buds with a

powerful microscope. It might be possible with a knife blade "thin as air," to cut this embryonic bud through the centre and bring two halves together so closely that when the Hyacinths pushed up or elongated the two halves would grow together and seem as one stem—white flowers on one-half, and red on the other, but we doubt whether there is any one living capable of performing such an operation successfully. We believe the embryo flower buds or spikes would be crushed by the finest knife at present known.

By not cutting quite up to the centre, and bringing two (little more than) halves together, two spikes might come up that would "seem" to come from one bulb, and interest the curious.—Ed. G. M.]

LITERATURE. TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

HORTICULTURE IN THE UNITED STATES DURING THE LAST FIFTY YEARS.

BY W. D. BRACKENRIDGE.

This is a subject not unworthy of our consideration when we look at the almost universal interest it exercises over the minds of the people of the present day.

At the time our story begins, 1837, Philadelphia was considered the headquarters of horticulture; here were to be found the Landreths and Maupays, as nurserymen, or dealers in fruit and ornamental trees; while Buist, Sherwood and Dryburg, Ritchie and Dick, McKenzie and Buchanan, with D. Fetters, were florists of good repute, and the few private collections of any note were Pratt, of Lemon Hill; J. B. Smith, of Moyamensing; General R. Patterson, and Mr. Pepper, the brewer, whose greenhouses occupied a building on Chestnut Street, second and third stories.

The principal kinds of plants then in demand consisted of Camellias, Roses, Pelargoniums and Chinese Primroses. Of hardwooded New Holland and Cape of Good Hope plants, were Acacias, Pimeleas, Chorozemas and Lechenaultias, with a sparse sprinkling of Cactus, etc., etc. Ferns were not known in those days by florists. In making up bouquets, which were not much in demand, the flowers used were mostly Camellias, Roses, single Chinese Primroses and Carnations, and as green to set these off, Chinese Arbor-Vitæ, with Rose Geranium leaves, were the steady stand-by. Plants in pots, for the decoration of private rooms or public halls, were seldom called for; in fact, the articles wanted, as Palms, Gum Elastic, etc., did not find a place with florists.

In New York, Thorburn, Hogg, Dunlap and Boll were the leading flower growers, while as tree nurserymen, the Downings at Newburg and Wm. Prince, Flushing, were the only notable cultivators. Mr. Prince, though eccentric in character, was notable for his zeal in introducing new and valuable fruit and ornamental trees into the country, and among these new things, which, be it said, proved of little account, was the Chinese Yam, about which, for a time, he bored the country, but after giving it a fair trial, it was found that half a day's work of a man was necessary to dig as many roots as would make him a dinner.

Boston then contained one horticultural establishment of merit, that of Hovey & Co.; one of the firm, C. M. Hovey, conducted the *Horticultural Magazine*, the only monthly periodical of the kind in the country. It was ably managed, and gave much valuable information on fruits, among which Mr. Hovey is an expert even at the present day. He it was who, against much opposition, advocated the merits of the Concord Grape, and it has nobly sustained the estimate he then formed of it. Boston people ought to be thankful that they have had a Hovey and a Wilder to educate them up to the high standard of horticulture which they now enjoy, and in which work my old friend, Dr. Asa Gray, has given valuable aid.

In the year 1837 such plants as are suitable for ribbon and carpet bedding out were almost unknown, but we then formed groups of roses, double dahlias, heliotropes—mixed with fish geraniums—as they were then called—but the effect produced was anything but artistic. But about this time a scarlet, a white and a lilac verbena were introduced by me (not by R. Buist, as published), and florists, by crossing these, in a few years numerous varieties were raised of almost all shades of color save yellow; and just let me say here, parenthetically, that I grew a yellow verbena in Scotland in the year 1832 (Verbena sulphurea), introduced from South America by Dr. Gillis; unfortunately, it never has found its way into the United States, so far as I know.

A few years previous Petunia phœnicea had made its appearance, and by crossing this with P. nyctaginiflora, a white species, many beautiful varieties, both single and double flowered, were the result. Now began fancy grouping of these, aided by the new varieties of fish or scarlet geraniums of various shades of color; but people were not contented with brilliant flowers; they sought after plants with gaudy foliage, which they found in Coleus, Achyranthes, Alternantheras and Centaureas; so, at the present day, it is no uncommon thing to find a bed filled with flowers and foliage of as many colors as that which made Jacob's coat so remarkable, and we would here remark that it takes no inconsiderable amount of taste to have the colors harmonize in arranging such beds, be the style either the ribbon, carpet or mixed type. Ladies, as a general thing, excel in this kind of work.

In Baltimore, where the taste for floriculture of late years has made rapid strides, credit is due to the Feasts, the Pentlands and the Hallidays for the aid they have rendered, while we think that the Maryland Horticultural Society, by its exhibitions, has exercised a more powerful influence than any other agent in bringing about the present pleasing state of things. Hundreds of florists have of very recent years sprung up in the city and its suburbs, yet these cannot supply all the demands for bridal parties, funerals, public feasts and private parties, so that quantities have to be procured from the northern establishments.

Then look at our public parks and squares in the city. What kind of aspect do they now present during the summer months from what they were a few years ago? They are found bright and beautiful, fit emblems of an advanced state of civilization.

About twenty years ago, one of the commissioners of the squares flanking the Washington monument asked me what ought to be done to improve those grass plats. I replied, remove the unsightly railings, and adorn the surface with groups of shrubs and beds of flowers. His answer was: "Oh! that would never do, as people would pull them up root and branch." My answer to this was, only give the thing a fair trial, and that it was his duty as a progressive man to educate and refine public taste.

In the same space of time that floriculture has advanced so rapidly pomologists have not been idle. The ancient list of native grape vines, which embraced little more than the Catawba, Isabella and Lenoir, is now supplemented by new and superior kinds that would stand counting by the scores. From many, wines are made equal in bouquet to any foreign brand, thanks to the late N Longworth, of Cincinnati, as the forerunner in this laudable enterprise.

The State of Ohio gave us a J. P. Kirkland, who raised some of the finest cherries now under cultivation.

Of pears numerous sorts have been introduced from abroad, but among these, if we except the Bartlett, it will be found that the finest and most profitable sorts are of native origin, having sprung up in hedge rows and waste places, to which have been added some fine sorts by Mr. Clapp and Mr. Dana. We do not venture to say much about the notorious kind known as Kieffer; the last we ate were not very mellow, and the tree is not proof against blight as reported. Pears do not bring such high prices as they used to do, but that wholesome and desirable fruit, the apple, still receives valuable additions to its number of kinds, and the quantity grown is immense. The quality of such as are grown in the Middle and Northern States does not compare well with those grown in the Western States in size and smoothness of skin, so that in the market the growers in the State of New York will scarcely be able to hold their own.

In the State of Delaware, and lands bordering both shores of the Chesapeake Bay, there are car loads of peaches grown now for bushels that were raised fifty years ago, and the planting of new orchards still goes on, and will continue. Small fruits, as raspberries, blackberries, currants and strawberries, have been greatly augmented in kinds as well as in quality. Every year brings forth a host of new strawberries, some of them good in fact, while most are represented as better than the best, particularly should they be brought to your notice by a traveling tree charlatan.

By the foregoing meagre statement it will be found that the country has arrived at a high state of progress in horticulture, much of which is due to the writings of the Downings, Wilder, Barry, Meehan and many other noted men, combined with the work of the American Pomological Society; not forgetting the aid afforded by descriptive and illustrated catalogues spread broadcast over the length and breadth of the land by the almost innumerable nurserymen and florists found in every section of our diversified and fertile country.

[The above interesting sketch appeared recently in the *American Farmer*, of Baltimore. Mr. Brackenridge's modesty has not permitted him to include his own labors—which have by no means been meagre—with those of his colleagues.

The Yellow Verbena was introduced by the writer of this in 1855. The color, however, was too "brassy" to be popular. There was just enough "yellow" in the tint to save the reputation of one who called it yellow, and that was all.—Ed. G. M.]

EDITORIAL NOTES.

FRANK J. SCOTT (see Frontispiece). — The frontispiece to our Volume for 1885, represents the Author of "Suburban Home Grounds," one of those standard works on American Landscape Gardening, which has done honor to our country and for which lovers of American Gardening will ever feel grateful. This beautiful book was issued by D. Appleton & Co. in 1869, in a large octavo of 600 pages, and reached three editions. Why it has been allowed to get "out of print" since, is one of the mysteries no one has yet explained. The preparation of that work commenced as a labor of love. The author went personally over every part of the United States where he could hear of a fine tree, a fine garden, or fine garden architecture, and embodied the work of his pen and pencil in this superb book.

Frank J. Scott was born in Columbia, South Carolina, 1828, but his parents emigrated to Ohio in 1830, and the son was reared on the Maumee, at Perrysburg, Maumee and Toledo, where he was

instructed as well as their good schools afforded, but much better perhaps by an exceptionally intelligent father. There were no Prangs in those days to introduce drawing into school systems. His love for the pencil was natural, and it became noted among the boys and girls for its attempts on portraits and natural scenery. As early as twenty-one he became enamored of landscape gardening and rural architecture, and in 1852 was engaged by a gentleman in Toledo to lay out a large block, which is yet considered the best specimen of gardenesque work in Toledo. In order to still further excel in this beautiful art, he spent a summer as student with the celebrated Andrew Jackson Downing, at Newburg, on the Hudson, and another with Downing and Vaux, this firm having taken in general architecture with landscape gardening. A year and a half was then spent among the famous old buildings, parks, and gardens of Europe, and on his return he established himself in his profession at Toledo. But the field seemed too poor for his ambition to excel, and he relinquished the attempt for that of a dealer in real estate.

In 1866, while busy in the improvement of a modest suburban house, he became impressed with the need of just such a work as finally culminated in the production of the beautiful book to which we have just referred. In 1859 he made a trip to South America, and in Chili met with the lady whom he had known in Paris, who was henceforth to be his partner for life, and where he was married in 1860.

Mr. Scott's father took a great interest in the establishment of a university in Toledo, and the son entered warmly into his father's project, and 1873 was spent in Europe studying the schools of art and trade in order to work these branches into the regular university plan. There is no place for the magnificent gardens and palaces of the old world in connection with the private citizen in our country, and yet these famous works of art are great educators. Mr. Scott's idea always has been to make our schools and colleges their counterparts here.

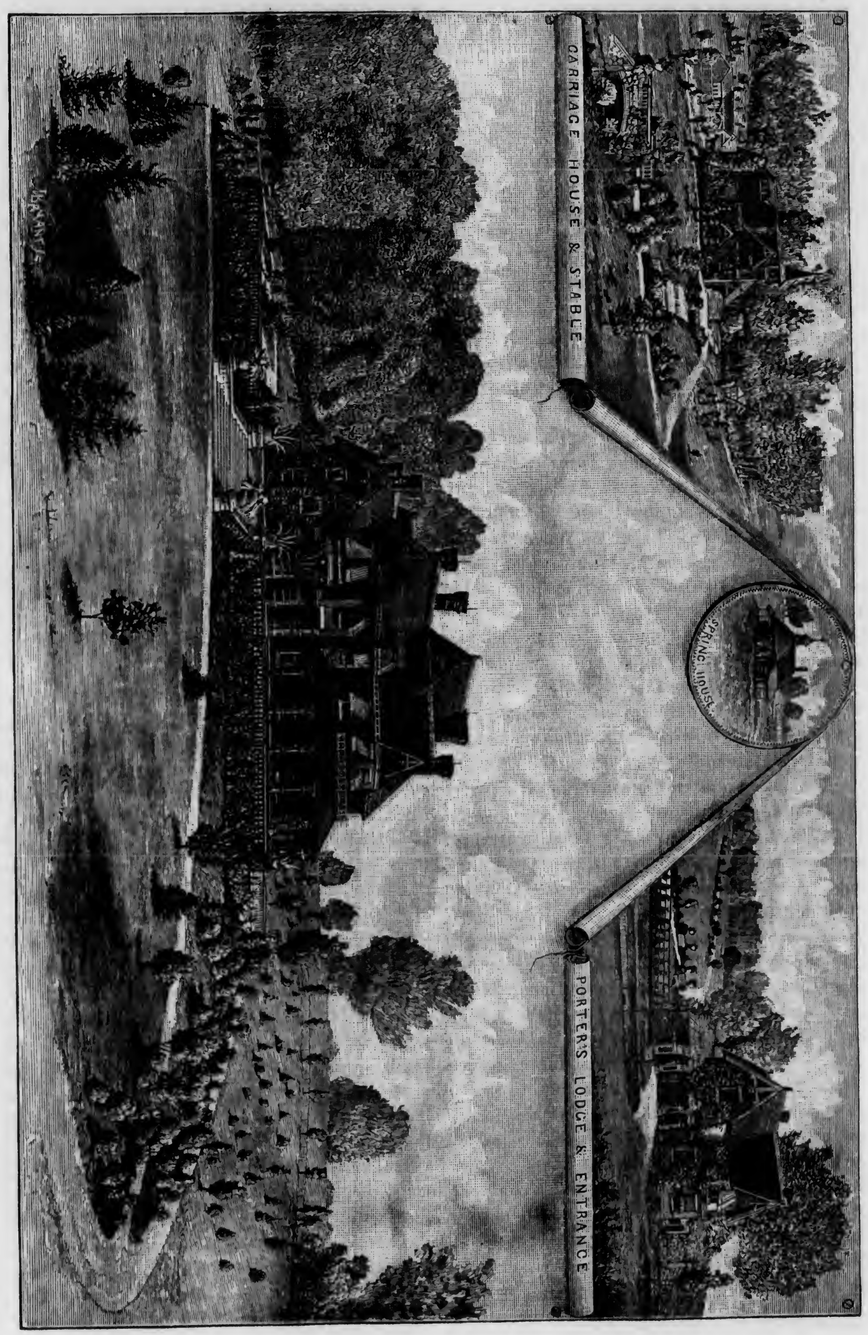
Studies in political economy and general literature have somewhat drawn our author from the tasks he has shown himself so well fitted to accomplish. The biographies of eminent men in the American edition of "Chambers' Encyclopædia" are from his pen, and more recently the banking system of America has secured his attention in the *Nort hAmerican Review;* but as he has not yet reached "three-score," there is time enough left for him to return to his early love.

Since the above was sent to press, we have the following additional notes supplied by a friend more intimately acquainted with the work of Mr. Scott than the writer of this:

"Mr. S. has been much of a traveler, having been twice in Europe, in California, the Rocky Mountain country, South America and the Hawaiin Islands. Since 1879 much of his time in summer, has been spent in Utah and Idaho Territories. In the latter, in 1880, his explorations in a mining region just opened among the lofty Saw Tooth Mountains of Central Idaho resulted in the publication by him of the first approximately correct map that had ever been made of the sources of four of the principal rivers of that Territory, two of which had before been represented on the government maps of that Territory as sixty miles away from where Mr. Scott located their sources.

"During the last twelve years the following essays from his pen show the direction of his thinking: 'The Palaces of America,' published in the *Radical Review*, of Boston, in 1873; 'Suggestions Concerning a National Currency,' the same year; 'National Works,' a plea for the Erie Canal to become a National and free canal, to be controlled by the United States, 1877; 'Pictures on Grass,' and editing a paper, in 1878; 'Property without a Price,' 1879; a very considerable portion of the biographical and monetary articles in the American addition to 'Chambers' Encyclopædia,' published by John B. Alden, of New York, in 1882, under the title of 'The Library of Useful Knowledge;" and the same year a lecture on the 'National Banking System,' read in New York city in 1881, and recently condensed in part for the *North American Review;* essays on 'Progress in Suffrage' and 'Climates,' read before clubs in Toledo within the past two years, are among the later papers that have appeared as occasion, and not a literary profession, called them out. His beautiful book, 'Suburban Home Grounds,' is about to be issued again under the title of 'Beautiful Homes,' by J. B. Alden & Co., of New York."

THE GROUNDS OF GEORGE W. CHILDS, BRYN MAWR, NEAR PHILADELPHIA.—Landscape gardening, as a fine art, met with a severe check in America by the sudden death of Andrew Jackson Downing over a quarter of a century ago. There may have been men in the profession as highly cultured and as equal in ability as he, but none seemed to have the power to transmit enthusiasm to others to such



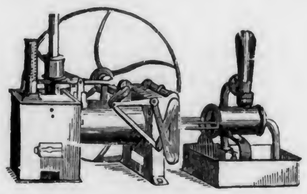
Wootton; the Residence of Geo. W. Childs.

an extent. The love for tasteful grounds has not been so catching since his day, but that it is not dead but merely sleeping may be evidenced by a drive any day in the suburbs of any of our large cities. Such a drive we took late in September around the comparatively new settlement at Bryn Mawr, which, though in Delaware county, is a suburb of Philadelphia. Here a large number of eminent Philadelphians have erected dwellings, with gardens extending from one to twenty or more acres, some of them of course evidencing mere expenditure without taste, which will afford no lasting pleasure; but others—and many more than might be expected—illustrating some of the best principles of garden art, and which will give results growing in beauty as the years pass away. In many of these hasty calls we found numbers of intelligent gardeners, with from one to two, or a dozen or more hands employed under them, with a commendable rivalry among them to improve themselves, and have increased pleasure in gardening by those who employ them. The earliest of these modern settlers is Charles Wheeler. His grounds, designed by Charles H. Miller, the landscape gardener of Fairmount Park, are a model of artistic grace. The trees and shrubs have now had time to grow, and the taste of the designer becomes more and more apparent. The grounds are kept in admirable order by Mr. Dewar, the gardener. A much more recent garden—in fact only six years since it was farm land—is Wootton, the country residence of Mr. George W. Childs, the well-known proprietor of the *Public Ledger*. As we are able to avail ourselves of some views that appeared recently in Ashmead's History of Delaware County, we will give a more extended account of Wootton, hoping to get similar views of others in the future.

Wootton, as the estate is called, was so named from one of the seats of the Duke of Buckingham in England. On a visit to England some years ago Mr. and Mrs. Childs were hospitably entertained by the Duke at that place. The landscape beauties of the spot made a great impression on the honored guests, and it was a nice tribute to the hospitality of the entertainers that Mr. Childs should buy and name a country place in memory of the good time enjoyed in the old world.

The entrance to the grounds is seen in the right-hand corner of the picture, and is adorned by a porter's lodge, at present occupied by Mr. John M. Hughes, chief gardener, whose tasteful hand has made it a veritable bank of flowers. The walls are covered by the Ampelopsis Veitchii, while between the windows and in every corner banks of flowers, ferns and leaf plants ornament the walls. On entering the wide carriage road we get at once a view of the dwelling house, which is situated on a gentle eminence, reached by a winding carriage road of easy grade that passes over the bridge seen in the left-hand picture. The beautiful stable seen in the left-hand picture is also in view from the entrance. Those accustomed to the best specimens of landscape gardening might here think of that rule which would not present two such fine views simultaneously; but remembering the newness of the work, the whole having been started since 1880, the planting will be closely examined, and found planned to remove this criticism as the trees grow up. The comparative newness of the planting also prevents the beautiful effects from dense masses of growth, which in older places are so effective in dividing and varying scenes. Here few things have had time to grow into each other. One might be tempted in some instances to introduce a few common things to thicken, temporarily, till the more valuable things grow. The bridge across the stream is taken advantage of to make a special beauty spot. Dense masses of flowering shrubs, flowering plants and ornamental grasses are on the back of the parapets, and through these masses the stream wanders. The effect is extremely beautiful. As in all efforts at landscape gardening we often find that in producing one effect we mar another, and one result here is to apparently narrow the roadway at this point, which of course was not in the original design. Mr. Childs has wisely avoided a too frequent error in country seats, namely, making the dwelling three or more stories high. Where there is plenty of room to spread out, mere height is a violation of propriety. This house, though not lofty, is very roomy, and so proportioned that we think most artists would call it a model of good taste. We have here also a specimen of a disputed point in American landscape gardening, the parapet wall around the house. We may grant that where there is much purely natural scenery, and in connection with many styles of architecture, they are out of place, and a mere sloping terrace of grass much preferable. But in this case the universal verdict would be that the effect is charming. Besides the actual comfort and room for flower culture which the plateau affords around the house, the gradation from the architectural to the natural features which the parapet wall affords is just what the true artist would desire. On this terrace, among other rare plants, are two fine specimens of the rare Bonaparte plants,—curious as well as rare from the narrow, slender trunks rising from huge, bottle-like bases. Mr. Childs is fond of the very pleasant practice of having his guests plant memorial trees, and on this plateau is a purple beech set out by Madame Nillson, and there are other pretty trees planted by General Grant, Senator Bayard, Thomas Hughes, Robert Winthrop, Hamilton Fish, and others. The original design for this part of the ground was, in the main, we believe, the work of Mr. Miller. In 1883 other grounds were purchased and taken into the ornamental grounds, and these, with the improvement and care of the older portion, have since been under Mr. Hughes' charge. In this newer portion we find the vegetable garden, greenhouses, forcing houses and other departments requiring concentrated care and oversight. It is interesting to note that cut flowers, once a necessity chiefly with those who had no living plants or conservatories, have become essentials to every cultivated home, and here quite a large rose-house was being built to furnish the family the floral queen through the winter months. The vegetable garden was a special treat to us, especially from the profusion of old-fashioned hardy herbaceous plants, which filled box-edged borders as in "ye olden time." A beautiful hedge of Japan privet divides a well-kept rosary from the kitchen garden, and the stables are screened by a well-arranged "stumpery" made from the roots of the forest trees that a few years ago occupied the ground.

The water for the plant houses, stables and other offices is pumped from an adjacent spring, very cheaply by means of an overshot wheel. That required for the mansion house is pumped



by means of an Erricson engine, which does its work in a thorough manner.

The illuminating gas required about the building is manufactured at a comparatively low figure from gasoline.

A very pretty feature of the utility department is the dairy, of which an illustration appears on the top of the picture. This is built of pure white quartz, and set over a perennial spring, the water flowing to the floor over a huge and beautiful shell brought from Japan by General Grant. The floor is paved with encaustic tile, and the whole is "just too lovely for anything." One might fancy that even sour cream would taste sweet if from a beautiful room like this.

With the author of "Suburban Home Grounds," the subject of our frontispiece, and these illustrations of good landscape gardening, we have a good landscape gardening number. We hope it will stimulate effort in that direction, as much of the pleasure of gardening dwells in beautiful grounds.

A Fraud and His Partners.—The Editor of the *New England Homestead* kindly informs us that some scamp is pretending to be a correspondent of our two papers, and "for a consideration," will insert in his correspondence a "puff" of their establishments.

Parties who sell counterfeit money and then cheat their dupes out of money advanced, by giving them nothing, are safe because they know that the intention of their dupes to be a party to the fraud, would criminate the dupes if known. They keep quiet, for no one sympathizes with them when the facts are known.

So with these dupes, any man who pays for a puff in an article intended to appear as reading matter, is a party to a fraud and ought to suffer.

But is it not wonderful that anybody will give money to a stranger for any purpose whatever?

Ridiculous Names for Fruits.—Big Bob's Baby is the latest specimen. Next we would suggest Big Bob's Baby's Boot, for of course it must be alliterative. Then when some rival thinks he has something better than this raiser has given us, it can be called "The Buster of Big Bob's Baby's Boot," or some such expressive cognomen; or Big Bob's Baby's Boot Badly Broken.

A Fungoid Disease.—It is wonderful how an error once started, becomes prevalent, even among those who should know better. As the word "a fungoid disease" fell from the lips of the Editor some years ago, Prof. C. V. Riley, who was at his elbow remarked "why do you say fungoid disease?"

There has been no need for Prof. Riley or any other person to ask that question of the Editor since. But we see it in works in the old world, of the highest scientific pretensions; "a fungoid disease" means a disease resembling a fungus. It is the intention to say a disease originating through

the operations of a fungus; we mean a fungal, not a fungoid disease. Many a time have we mentally thanked Professor Riley for the hint.

AZALEA MOLLIS.—Germans who try to do English, often do it very prettily. The following is from a catalogue intended for English readers:

"The Azaleas Mollis has now become one of the most important plants in the commerce and forms a special culture of my Establishment.

"Since the merit of that avantageous plant has been recognized I have applied myself to develop the culture of it.

"Once having seen its fine heads covered with magnificent flowers of all shades at a time of the year when nature scarcely allows other plants to show their buds; who whould not possess the beautiful colours of the Azealeas Mollis; it, however, is chiefly during the winter that this plant makes the admiration of every body for being forced so well it is to be found perfectly blooming in the coldest season of the year."

Then of the Camellia he says—

"The Camellia culture is the one that I am most fond of; it is a plant that always charms the eye; the greenness of its beautiful foliage pleases always; in winter as well as in summer it keeps its brilliant green colour. How beautiful is a Camellia when spring arrives; the flowers of that fine plant are admired by every body and are particularly useful for cutting purpose."

WATER RIGHTS.—A Scotch court has decided in effect, that no one has a right to pollute a stream so that it shall be unfit to drink by a party below; but if water has not been used for general drinking purposes for forty years, the drinking rights of parties below have been forfeited.

FAMINES IN THE LAND.—No one need fear a recurrence of the famines which, as history relates, formerly desolated the earth; steam brings the surplus of favored parts rapidly to the starving sections. It would not take long in these days for Abraham's descendants to learn that there was corn in Egypt. In Ohio this year strawberries were nearly a failure, at least not half a crop, and at the July meeting of the Montgomery County, Ohio, Horticultural Society, Mr. Ohmer wanted to know what caused the cheapness of strawberries in this market in view of the fact of only a partial crop here; to which reply was made, and generally concurred in, that it was due to shipments from the South. No one can in these days calculate on an increase of price because of a famine in his immediate vicinity.

RUSKIN'S NOTIONS OF BOTANY.—Recently we noted the singular ignorance of popular magazine writers about things in botany and horticulture, that they could know all about by a few moments of investigation, if they were not so impressed with the idea that they knew all that is worth knowing. The case then was Bret Harte. Before us we have another case in Ruskin, the teacher on Art. He started to write a book on botany, showing how it should be taught, and how miserably it was pursued by botanists, when, by his own confession, he did not know what a moss is. But he quarrels with everything that botanists have done and would reorganize the whole thing. In nomenclature he would change all the terms in use. In the place of ovary he would have "treasury," pistil he would replace by "pillar," and for the stigma he would have "the volute." Just how much the study of botany would be helped by these changes it is hard to see, but the case exhibits the sort of stuff that passes for literary smartness.

THE PAPAW TREE, CARICA PAPAYA.—Mons. de Nobele, in an article on this tree in *L'Horticulture Belge*, says the name Papaya is derived from the Caribbean word *Ababaye*.

MR. M. H. LESTER.—Some months since we noted that Mr. Lester had left New Orleans and would re-engage as gardener with any one in need of such services. But a desire to visit the great exposition at Antwerp, led him to postpone his wishes in that respect. Having returned, he may now be found, by addressing him in care of Mr. W. R. Smith, Botanical Garden, Washington, D. C.

MRS. M. P. WILDER.—We are quite sure we may tender on behalf of the whole horticultural community, its heartfelt sympathy with Col. M. P. Wilder, in the great loss he has endured by Mrs. Wilder's death, which occurred on the 16th of November at his residence in Dorchester.

JOSEPH SCHWARTZ.—Rose lovers will be familiar with the name of Mr. Schwartz, who was becoming famous in connection with new roses. We see his death announced as occurring at Lyons on the 11th of October, at the comparatively early age of 39.

SCRAPS AND QUERIES.

R. C. POPPEY.—After going to press last month, we found the following unique specimen on the Editoral desk, sent over from the publisher's department. Fearing R. C. P. may not already have had the "ample satisfaction" he desires, we give in addition, his sweet epistle:

"Enclosed please find twenty-five cents in stamps, for the GARDENERS' MONTHLY of October, 1885. I hope the Editor will give me ample satisfaction, and save me the expense and trouble to seek legal redress. Very respectfully,

"R. C. POPPEY, Wilmington, Mass."

MR. GROVE P. RAWSON.—Mr. Rawson writes: "If you will take the trouble to ascertain the facts, you will find that I have the largest florist establishment in South-western New York, a character above reproach and honorable in all my dealings."

[We can only repeat our regret that we were led into those personal matters, by what seemed to us as a wholly impersonal and innocent communication.—Ed. G. M.]

PROSPECTS OF GARDENING IN GEORGIA.—A lady correspondent writing from Dalton, says, that fruits grow so easy that everybody has thousands, therefore no one needs to buy. Thousands of bushels of peaches and apples rot on the ground.

It is not likely to be so long, as that section is rapidly seeing the advantages of a consuming as well as a producing class. She says:

"This section is struggling bravely to keep abreast with the spirit of the age, and in its schools and colleges, its cotton mills, factories and many varied industries, agricultural and mechanical, displays commendable activity and earnestness in the march of progress. Its native wealth is great, and when its vast mineral resources are developed, and its mines of gold and silver, of iron, manganese, coal, stone, talc, etc., are made to yield up their treasures to man, and every vale and hilltop and mountain side shall ring with the glad notes of thrift and prosperity, then shall a glorious destiny be realized by this sweet summer land of Georgia."

EXAGGERATED PICTURES.—A correspondent who has had much to do with the staggering task of making pictures for catalogues, desires us to publish the following from the *London Garden:*

"It is said that even the humble worm will 'turn again!'—if trodden upon too often. There cannot be a more humble and inoffensive individual than the horticultural artist. I, alas! am one. I have no pretensions to independence of thought or hand; I am a mere nurseryman's drudge. I am not benefitted when I portray a dingy dwarf as a gorgeous giant. I merely do what my kind employer tells me; he pays me my humble pittance, rubs my name off my work, and publishes my picture. Sir, I am so well acquainted with nurserymen's requirements, that I have in constant use a 'nurseryman's proportional compass'—devised by myself; there is a movable screw in the middle, so that one end may be made to open twice, thrice, four, or even five or six times more than the other. If I have a plant from Mr. Swaggs, I move the screw to Mr. Swaggs' mark, and I measure with the small end and draw with the big one. If Mr. Pelter sends me a plant, I move the screw to Mr. Pelter's mark, and I always give satisfaction. I call my compass a 'horticultural florometer.' When young I did not like these exaggerations, and I trembled for my reputation and honesty, but my chief nurseryman told me it was all right, as 'he always rubbed the artist's name off.'

"I was also not long in learning that nurserymen not only hold the poor draughtsmen in slavery, but that they 'had' the publishers as well. For instance, Mr. Topper writes to his publisher, 'Dear Mr. Sycophant,—If you will send your artist to paint my new magnificent Mimulus, I will take 500 copies of your monthly magazine.' When the submissive artist goes to the rich nurseryman he is told that all the best Mimuluses have 'gone off;' that a few poor blooms are left, but they are not one-quarter the size of those just 'gone off.' If the inoffensive artist will draw these small flowers exactly four times the size of nature, they will well represent the missing blooms. Should the poor drudge remonstrate, a threat is held out that the 500 copies will be cancelled, and Mr. Sycophant, the publisher, will come down on the draughtsman 'like a thousand of bricks.' Well, sir, I made a mistake once, and I did quietly enjoy it—behind my master's back. There was a plant race: Two nurserymen were each madly eager to get a 'new plant' out first. Mr. Swiggers sent the blooms on to me by post in hot haste, with a request that I should get his out first at all risk and an extra half-crown would be my reward. Sir, I got out my compass—Mr. Swiggers' stretches more than any other man's; I polished the plant off like lightning and got it out first. On the day of its publication I received a letter from Mr. Swiggers' under-secretary summoning me immediately to the plant emporium. Of course I went—instantly. Mr. Swiggers was there with dilated eyes, hair on end, and his tongue cleaving to the roof of his mouth—speechless. At last he said, 'Oh! Mr. Staggers, I tremble under the blow you have put upon me: the plant my young man sent was a dwarf variety, and ought to have been shrunk in size at least three times; whereas you have enlarged it with your peculiar compass six times. I am ruined! I am ruined! You artists are a bad lot; you have got no sense.' Mr. Swiggers took good care never again to employ the inoffensive STAGGERS."

THE PAST YEAR IN WASHINGTON TERRITORY.—A lady writes; "Our Washington Territory weather is nothing if not in an extreme one way or another. March and half of April were hot and dry as July usually is. Spring-blooming bulbs were scorched with heat, and 'June roses' bloomed in April. Now we have had two weeks of cold rain, and some hail, and prospect of 'more.' Mrs. Thomson's plan for propagating reminds me that I used to fill my wash-boiler with boiling water, set over it a shallow box with the

bottom thickly perforated, and in that, covering all the openings, set the cans of slips I wished to root. I thought the bottom heat thus obtained of service. The 'York and Lancaster' Rose is very common here. People call it the Calico Rose. I am very glad of a better name. F. E. B."

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

MASSACHUSETTS HORTICULTURAL SOCIETY.

BY G. L. B.

The annual exhibition of Chrysanthemums by the Massachusetts Horticultural Society, on the 12th and 13th of November, was in many respects the most successful ever given in Boston; and that is saying a great deal, as these exhibitions have taken place for years, and do not depend upon a mere fanciful craze among society people for their popularity or completeness. The horticultural taste in Boston is too deep and sincere to be eddied here and there by the whims of fashion, and that is the reason for the unvarying progress and popularity of the Boston Flower Shows. Over ten thousand people attended this exhibition, and had it been kept open another day, not less than 15,000 would have attended. Some of the principal growers did not exhibit, owing to various vicissitudes, among them Marshal P. Wilder and C. M. Atkinson. Last year the latter staged some of the most remarkable specimens of single stem Chrysanthemums ever shown in this country, and it was regretted that he could not compete this year.

The upper hall of the Society, comprising 5,000 square feet, was devoted to Chrysanthemums in pots and the Orchid display; while the lower hall was given over to cut blooms, and fruit and vegetables. Even both of these large halls were inadequate to hold the various collections.

The first prize for the 6 Chinese Chrysanthemums was taken by Dr. H P. Walcott, of Cambridge, with the following varieties—Mrs. Forsythe, Bruce Finlay, Baron Buest, King of Crimsons, Mrs. Sharp and Mrs. Shipman. These were magnificent plants, in twelve-inch pots, grown naturally, the blooms not tied down, and each plant between 4 and 5 feet high, and averaging 5 feet across. The same may be said of all this grower's plants, which were admitted to be the best grown plants ever shown in one lot in this country.

Dr. Walcott was also first for 3 Chinese—Mrs. Dixon, Christine and Alfred Salter. He was also first for 6 Japanese, with glorious plants of La Charmense, Flambeaux, Nevada, Bouquet Fait, Golden Dragon and President Parkman. For 3 Japanese, Dr. Walcott came first with Fair Maid of Guernsey, Moussillac, and Belle Valantinan.

For 4 pompons, Dr. Walcott was first with Salamon, La Vozne, Mdlle Marthe and Golden Mdlle Marthe. The specimen Chinese Chrysanthemum, Gladstone, offered by Dr. Walcott, took the first prize, and the latter took first prize for specimen Japanese Chrysanthemum, with Fernand Feral.

Dr. Walcott's only competitor in these classes was a new grower, Mr. Edwin Fewkes, of Newton, whose plants, while smaller, were yet well grown and very clean and perfectly flowered. He took all the second prizes for specimens. The first prize for forty specimens, not less than 10 varieties, was awarded to E. W. Wood, who staged handsome plants of the following—Annis, Bouquet Fait, Citronella, Damio, Dr. Sharpe, Elaine, Fremy, Fair Maid of Guernsey, Golden Circle, Golden George Glenny, Golden Dragon, Gray's Golden Beverly, Mabel Wood, John Salter, Madame B. Rendatler, M. Plauchinan, Mr. Geo. Glenny, Mr. Geo. Rundle, Prince Alfred, Prince of Wales, Semiramis, Snowball, Souvenir de Mercedes, Seur Melanie, Temple of Solomon, and White Eve.

Edwin Fewkes was second in this class and Patrick Malley third. The first for anemone flowered Chrysanthemum was taken by Dr. Walcott with a grand specimen of Timbale argent. Other collections were shown by Norton Brothers, Hovey & Co., Warren Heustis and Mrs. Francis B. Hayes. Among the collections and specimens many new varieties were shown, the Japanese class predominating.

The display of cut blooms was very large, and hundreds of seedlings were shown. It is evident that while the tendency to grow these is laudable, and should be encouraged, that on the other hand there is a tendency to flood the field with varieties which are not distinct or remarkable. Many named kinds have been placed in commerce, which a year hence will be thrown aside by growers as worthless. Standing out in marked distinction with the average run of seedlings was a magnificent white reflexed flower shown by Dr. Walcott. This, which was labelled C 10, was considered the finest white seedling ever shown in Boston or anywhere else. It is a perfectly shaped globular flower, with firm strap-shaped petals of such pure color that Elaine looks dusky beside it. The petals reflex in such a way that the flower appears to be globular, and the centre is filled to perfection. The specimen on exhibition measured over 4 inches across. It was awarded a first-class certificate of merit, and was stolen on the last night of the exhibition by some one who no doubt hoped to propagate it from the stem. Dr. Walcott showed blooms of other fine seedlings, notably a yellow and a pink Japanese flower, both very large and promising. A silver medal was awarded Dr. Walcott for an immense plant of his seedling B 25. This is a small reflexed flower of vigorous habit, but whose chief charm is its intense dark yellow color. It is quite distinct in this respect, and will prove a valuable acquisition. Other fine seedlings of Dr. Walcott, viz., George Walcott, lilac striped, Colorado Yellow and Algonquin Yellow were shown and generally admired. Mr. Fewkes exhibited a group of seedlings, all of good form and color.

A large group of seedlings was shown by Patten & Co., of Salem, most of them inclining to be open-eyed, but noticeable for the varying forms and colors, which were pleasing.

J. Lewis Childs staged a good group of cut blooms, and E. M. Allen exhibited a bronzy yellow seedling called Brazen Shield.

In the competition for cut blooms Edwin Fewkes was first, with 12 blooms of Chinese Chrysanthemums. This was a very perfect lot, and were named Isabella Bott, Rival Little Harry, Princess Teck, Barbara, Hereward, Eve, Mr. Corbay, Mabel Ward, St. Patrick, Nil Desperandum, Lady Slade and Mr. Bunn. He was also first for 6 blooms of Chinese, as follows—Lord Wolseley, Guernsey Nugget, Pietro Diaz, Princess of Wales, Mrs. Forsythe, General Slade.

E. Shepard, of Lowell, staged 12 cut blooms of Japanese Chrysanthemums, and took the first prize in this class. The first prize for 24 sprays of Japanese blooms went to Edwin Fewkes for unexampled specimens of Souvenir de Haarlem, Carmen, Gloire de Toulouse. Album plenum, La Frizure, Daimio, Fulton, President Parkman, Ben d'Or, Beaute de Toulouse, Source d'Or, Bouquet Fait, Dr. Masters, L'Incomparable, Baron de Prailly, Moonlight, Flambeau, Oracle, Boule d'Or, Aurore Boreale, Mme. C. Andiguer, M. Paul Fabre, Gloire Rayonnante, Margot.

Mr. Fewkes took first for 24 sprays of Chinese as follows—Faust, Jardin des plantes, Princess Teck, Talford Salter, Souvenir Mercedes, President Sanderson, General Slade, Golden Queen, Antonelli, Isabella Bott, Hero of Stoke Newington, Cherub, Hereward, Mr. Bunn, Barbara, Venus, Mr. Corbay, Eve, Jeanne d'Arc, Mrs. Forsythe, Rival Little Harry, Mrs. Dixon, Mr. Geo. Glenny, Mabel Ward.

Mr. Fewkes was first for 6 blooms of Japanese—Baron de Prailly, Soleil Levant, J. Delaux, Belle Paule, Chinoiseire, Mrs. C. Cary.

As is always the case, the display of Orchids was large, and crowds surrounded the stage, which was filled with splendid specimens. Fred L. Ames took first prize for 3 orchids, showing Cypripedium insigne Maulei, with some 18 flowers, Odontoglossum Alexandræ, and Vanda Sanderiana, the latter bearing a spike of 7 highly-colored flowers. E. W. Gilmore was second with Oncid. ornithorynchum, 3 feet across, Odontoglossum grande, and a fine specimen of Saccolabium Blumei majus. The third prize for 3 orchids was won by F. L. Ames, with Vanda cœrulea, Phalænopsis amabalis, and Cypripedium Spicerianum, the latter with about 15 flowers open. E. W. Gilmore was fourth with Dendrobium formosum giganteum, Oncidium variosum and Lycaste Skinneri.

David Allan took first prize for a specimen orchid with Vanda cœrulea, the blue flowered Vanda, bearing two fine spikes. F. L. Ames was second with a glorious specimen of Cypripedium Harrisonianum. W. A. Manda, of the Cambridge Botanic Garden, had a fine lot of orchids and rare greenhouse and hardy plants. Mr. Ames exhibited for the first time Cypripedium tessalatum porphyreum, a fine hybrid, and Cypripedium Tonson, a species. Both are striking orchids, and received a certificate of merit. There were many other rare orchids on the stage, the whole producing a floral *tout ensemble*, which cannot easily be described. There were brilliant collections of cut flowers from many other exhibitors, which in this limited report cannot even be alluded to in detail. The fruit display was large and especially good as to pears. Among the latter were Angoulemes, Anjous, Langeliers, Lawrences, Vicars and Winter Nelises.

J. P. Knight exhibited Japanese pears and two

seedlings from the same. One of the latter was remarkably beautiful. A dish of Psidium (Guava), which is rarely seen, was shown by Mrs. F. B. Hayes.

The Society has just appropriated $5,800 for prizes for the year of 1886, and its exhibitions for that year are likely to be larger than ever. A not unlikely probability is, that within a year the Society will secure a lot of land on the Back Bay district and erect a light building for large exhibitions, having from ten to fifteen thousand square feet, all on one level. When it is stated that the yearly receipts of the Society for admission to its four great exhibitions, have grown from about $600 in 1882, to over $3,600 in 1885, the necessity for increased accommodation will be appreciated.

HORTICULTURAL DISPLAYS.

BY JOHN WOODING.

The Autumnal exhibition of plants and flowers of the Pennsylvania Horticultural Society was a great improvement on last year. All the exhibits were very good indeed, especially were those plants good of an exotic nature It is almost unnecessary for me to name here all those who exhibited plants and flowers and received premiums, as the list has been published in the Philadelphia daily papers, but I will name a few plants which I saw there, and by whom exhibited, worthy of special notice. A collection of tuberous begonias by Mr. H. A. Dreer were very good, with double scarlet and pink flowers. These are a great improvement on some of the older varieties. I think these would do very well as summer bedders in a partly shaded position, and would have a very striking effect. They were awarded a special premium. Another plant, a palm, and the only one of the species I saw there, was Cocos Weddelliana, of recent introduction, by the same exhibitor. This is one of the most graceful palms in cultivation, and would make a fine decorative plant for the dinner table. It is of a dwarf habit, and has fine recurved foliage. This plant is rather scarce and dear, costing about fifteen dollars in an eight-inch pot. I have one of them which seems to do well with the usual method of treatment for palms. Two other plants of recent introduction, and the only two I saw there of the kind, were Abutilons. These are quite distinct from any I ever saw before. They are fine ornamental foliage plants, beautifully variegated, streaked with crimson and golden yellow. I have mislaid the botanical name. The flower is insignificant,—indeed, if they did not flower at all, they are well worthy of a place in any collection. One of these plants was exhibited by Messrs. Fergusson & Sons, Laurel Hill Nursery; the other by Mrs. Jayne's gardener (Mr. Nesbet). Both exhibitors were awarded premiums. A collection of fifteen ornamental foliage plants exhibited by A. Warne, gardener to C. H. Clark, Esq., West Philadelphia, were deserving of special notice on account of their fine, healthy appearance. The Marantas showed up their markings to perfection, and were well grown and much admired. A first premium was deservedly awarded for them.

The Caladiums on exhibition, I think, could not be excelled, were in a high state of cultivation, and displayed their elegant and brilliant markings to perfection. It may be here noted that the plant commonly known as Caladium esculentum does not belong to this genus.

A few water lilies were exhibited by the well-known dealer in aquatics, Mr. Sturtevant; of Bordentown, New Jersey. Nymphaea odorata, double white, and two or three others of a pink color; very fine. Also the lace plant, growing in a small tank of water, quite a curiosity, were awarded a special premium.

Speaking on the subject of flower shows, they do not seem to have the patronage they deserve by the wealthy classes. Probably if Canon Farrar could have been induced to give a lecture one night during the show, the exhibition itself might have been more successful. I am informed by fellow-members of the society, that the receipts from visitors to the show did not pay more than a third of the expenses. It will be impossible for the society to continue to give premiums in money, if the exhibitions are not better patronized. The income from the three dollars a year membership is hardly equal to this object.

Pencoyd, Montgomery County, Pa.

[We have here again the suggestion often made before of the difficulty of getting the great public to appreciate horticultural exhibitions. We have had our say often before, and have pointed out the weak places, with little effect, however.

We will only say, in brief, here that there is no reason why any exhibition should lack the fullest patronage if managed in the way a business man would manage his business. There is not a person in the world but loves fruits, flowers and gardens, and every person who could spare the time and money would come to the exhibition when he was made to understand that there was something worth seeing.

Too often—and we are not referring now to the meeting of the Pennsylvania Society—there is little more to be seen at a horticultural show than people can see without spending time or money in any ordinary garden, or, perhaps, at a street corner. When a society finds that even heavy premiums fail to bring out the articles that people would certainly flock to see, why not consider what would bring out these excellencies?—Ed. G. M.]

OPENING DAY OF THE NORTH, CENTRAL AND SOUTH AMERICAN EXPOSITION.

BY J. E. WALDO.

Yesterday was truly a gala day in New Orleans. All business was suspended. Many of the stores were not opened even for the early morning hours, the city devoting itself to the ceremonies of the opening day of the Exposition. Many buildings were handsomely decorated. Bunting was freely displayed in all directions. At an early hour the streets were filled with people crowding to the different railroad and steamboat lines to the Exposition grounds, and by 12 o'clock it is estimated that 50,000 people were on the grounds. If the attendance at opening day is to be taken as any manner of augury for the future, then will the Exposition be a grand success. Music Hall, platform, chair seating in front of the platform and galleries were filled to their utmost capacity, and while there was no appreciable diminution in the crowds on the grounds, this crowd in Music Hall to hear the speeches and listen to the music could not have been less than 12,000. Professor Aquin's band of fifty pieces, assisted by several hundred voices, added much to the eclat of the occasion. Their performances were enthusiastically received and encored again and again. The grounds were in good order, and the spaces in the buildings were allotted weeks ago; but the hammers and saws of the exhibitors, as is usual in similar expositions, were heard on all sides. Possibly two weeks hence may see some of the exhibitors still getting in position. The management have caused the space in Horticultural Hall, in which the grand fruit display of last year was made, to be laid out as a winter garden, and very tastefully. Many very fine plants, both tropical and semi-tropical, are used in its formation. It will doubtless prove very attractive to visitors. But of the policy of thus giving up the effect of one grand concentrated fruit display, and by so doing forcing a dozen or more fruit displays in different State exhibits, I leave for others to speak. Last year's fruit display was grand and very attractive. The divided fruit displays by the different States and territories possibly may be equally attractive. In the large greenhouse attached to Horticultural Hall our New Orleans florists have some fine displays.

New Orleans, Nov. 11th.

EDITORIAL NOTES.

THE CHRYSANTHEMUM SHOW OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.—As our December number goes to press earlier than others on account of the preparation of the Index for the whole volume, we have space for but a short account of this admirable exhibition. Even had we time, half the whole number would be required to do it justice; for, certainly, such an exhibition has never before been held in our country.

We may say in a general way, that the improvement in growth was very marked over last year. A large number of exhibitors had learned to grow the plants so vigorously, that the heads of flowers were borne on strong, self-supporting stalks, and only a few stakes were used here and there to make the plants proportionate. In a few instances, however, the old plan of using a forest of sticks, was still retained. In one collection where they were extensively used, there were forty-two stakes in the one pot, and almost a whole ball of twine employed to keep each flower in place.

The first premium of $100 was awarded to Mr. Walter Coles, of Claymont, Delaware. His fifty plants were of irregular sizes and forms, but the comparative absence of stakes was marked, and the plants had on the whole, a natural look. A few of the plants were superb specimens. The majority of the plants had about 200 well-formed flowers on each. One called Jessica, white quilled with a darker strap shaped edge, was about 4 feet high by 4 feet wide. Another yellow, called gloriosum, was about 4x4 feet at the base. The plant had a somewhat conical form, and was clothed with flowers from bottom to top. In globose form there was President Arthur, about 3x3 feet, the flowers pink-quilled and about 6 inches across.

Mr. Warne, gardener to Clarence H. Clark, came very close to this collection, but the plants were rather over-trained. These were globular, mostly about 3x3 feet, and each flower trained out so as to show itself to advantage. At a little distance the plants looked like a grand collection of azaleas, so evenly were the flowers arranged. This plan of growing them is well adapted for

decorative purposes; and it was this collection chiefly, arranged on ascending steps, that gave the chief attraction to the Hall.

Of seedlings there were over seventy-five varieties offered in competition, all possessing some merits which will no doubt develop into something better after cultivation. The committee thought the new white seedling, "Edna Craig," anemone centered, of extra merit for the purity of its color, large size (five inches), fine substance of petal and general good character. They awarded a silver medal to Hallock, Son & Thorpe.

"Yum Yum" the committee also approved as being quite new and distinct in color and form, the petals being tubular fully two-thirds of its length, expanding into an open flat surface of crimson, the large yellow disk showing more prominently than in any known variety. Bronze medal awarded to Hallock, Son & Thorpe.

A bronze medal was given to Richard Brett, of Short Hills, N. J., for the seedling "Bessie Pitcher," a Chinese anemone of rose pink color, with pink centre.

Silver medal for a seedling called "Pink Beauty," but which the committee recommended should be called "Laurel Hill," to Julius Wolff. This is a Japanese variety. Special mention was made of a white seedling, "Avalanche."

The smaller collections by growers, dealers and amateurs were mostly arranged in tasteful clumps with walks between on the floor of the grand hall; but so great was the demand for space that the different collections could not be kept well distinct, and the public had no opportunity to judge of the comparative excellencies of the separate collections, or in many cases to know whose collections he was looking at. There was a beautiful specimen of Madame de Pallenville with 650 flowers, the plant being only about 18 inches high from the pot, but 4 feet across, the owner of which we could not guess at.

Another oversight is the lack of prominent labels. All had small wooden tallies somewhere down in among the vegetation, which few could reach or read when found. Dreer, Coles and Warne had cards attached to stakes near the eye line, for which visitors were thankful. The cut flower department was unique; and many from other States competed. Dreer and Coles must have had about 200 kinds each; and though one might wonder how it was possible there could be anything novel after all these, the seedlings of Hallock & Thorpe and Richard Brett showed numbers wholly new and very beautiful.

We are sorry our space commands us to stop; but we must add that no exhibition for many years took the public by surprise as this did. Thousands flocked to see it, and the influence on public taste was very great. The public will see when there is novelty to look at.

THE NEW YORK CHRYSANTHEMUM SHOW.—A correspondent says: "The exhibition was magnificent, both in specimen plants, cut flowers, and designs of Chrysanthemums. Autumn leaves and fern fronds were used in making up, and there were some elegant baskets, bouquets, etc. The loose natural arrangement was very effective. There were some flowers that measured nearly 8 inches in diameter. There were some marvellously large and perfect flowers of Comte de Germany and Grandiflorum, among Hallock & Thorpe's collection. They showed some wonderfully improved flowers in the Anemone class. A six-feet standard of Triomphe de la Rue de Chatelets was a grand affair. There was nothing more distinct in the yellows (Japanese) than Mrs. R. Brett, and hardly anything better in the pink section than Bouquet Fait; and it is hard to find a better flower than M. Moussillac in the high colored class. Fine specimen plants of the single Mrs. Gubbins attracted much attention. Galathee, Jeanne d'Arc, M. Moynet, Mrs. C. W. Wheeler, Hon. John Welsh, etc., were among the specially attractive and distinct sorts."

HORTICULTURAL CONVENTIONS.—Botany and horticulture have become so closely interwoven that the two generally go together now in the old world. The latest novelty in conventions is to bring together those who are interested in any one class of plants, both botanists and horticulturists, and they exhaust the whole subject. Last year, in London, they had an orchid convention, and the advance made in orchid knowledge by the meeting convention was remarkable. Next we are to have a conference on Primula, or the primrose family, at South Kensington, on the 23d of April. The members will examine every plant or specimen that might be offered for exhibition. The 24th will be devoted to reading papers, and talks about primroses. As under this term we have Auriculas, Polyanthus, American Cowslips and numberless other popular favorites, the interest in the convention will no doubt be equal to that taken in the orchid.

The committee for the United States consists of Prof. Asa Gray, of Harvard; Prof. Lawson, of Halifax, Nova Scotia; Prof. Thurber, of New York, and Prof. Meehan, of Philadelphia.

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